



2016

Meter, Phrase, and Form in the Compositions of Maria Schneider

Benjamin M. Geyer

University of Kentucky, ben.piano@gmail.com

Digital Object Identifier: <http://dx.doi.org/10.13023/ETD.2016.126>

Right click to open a feedback form in a new tab to let us know how this document benefits you.

Recommended Citation

Geyer, Benjamin M., "Meter, Phrase, and Form in the Compositions of Maria Schneider" (2016). *Theses and Dissertations--Music*. 56.
https://uknowledge.uky.edu/music_etds/56

This Doctoral Dissertation is brought to you for free and open access by the Music at UKnowledge. It has been accepted for inclusion in Theses and Dissertations--Music by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Benjamin M. Geyer, Student

Dr. Richard C. Domek, Major Professor

Dr. David W. Sogin, Director of Graduate Studies

METER, PHRASE, AND FORM
IN THE COMPOSITIONS OF MARIA SCHNEIDER

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Fine Arts
at the University of Kentucky

By
Benjamin M. Geyer

Oberlin, Ohio

Director: Dr. Richard C. Domek, Professor Emeritus of Music Theory and Composition

Lexington, Kentucky

2016

Copyright © Benjamin M. Geyer 2016

ABSTRACT OF DISSERTATION

METER, PHRASE, AND FORM IN THE COMPOSITIONS OF MARIA SCHNEIDER

The central claims of this study are that Maria Schneider relies on normative rhythmic structures from the jazz tradition, and that her expressive deviations from those norms are comprehensible to experienced listeners in real time. The study proposes a non-recursive model of hypermeter wherein the measure is formed through entrainment, the four-bar sub-unit is formed through recognizable qualia at the measure level, and the eight-bar level is formed through the expectation for sub-units to group into pairs. I introduce the “structural phrase” as a unit that, while normatively hypermetrical, is distinct from the issue of hypermeter in its formal aspects and its ability to diverge from hypermetrical organization. Structural phrases mediate our sense of place in the music, and they most often begin with an audibly clear attentional peak that I call the “structural phrase onset.”

I posit that experienced listeners understand how structural phrases operate in Schneider’s compositional style through awareness of the relative frequency of each structural phrase type. Based on data gathered from a corpus of twenty-four pieces, comprised of 1,105 structural phrases, I find that 61% of Schneider’s structural phrases are normative. Further, the influence of the normative structural phrase supersedes its literal appearance on the surface of an acoustic signal, serving as the conceptual background for nine dialogic deviations: 31% of structural phrases are deviational yet operate in direct dialogue with the norm. Only three deviation types, accounting for 8% of structural phrases, are entirely independent of the normative organization.

Structural phrases function as shallow-level formal units that group into deeper levels. This study categorizes Schneider’s formal approach as a hybrid between two practices: (1) traditional big band arranging, in its emphasis on improvised solos and idiosyncratic features such as the “ensemble feature” section; and (2) sonata form, in its motivic-thematic emphasis, freely unfolding sectional organization, and broadly three-part design. I refer to the three parts at the deepest structural level as “three-Spaces,” including Exposition, Solo, and Recapitulation Spaces. These Spaces are comprised of seven types of sections at a lower structural level: introduction, expository, transition,

soloistic, ensemble feature, recapitulative, and coda sections. Three “formal division criteria” specify how these sections audibly signal divisions between the deeper-level Spaces. An in-depth analysis of *Hang Gliding* explores how rhythm at multiple structural levels interacts with other parameters such as pitch, orchestration, and dynamics, to shape a composition’s dramatic arc.

KEYWORDS: Meter, Phrase, Form, Jazz, Maria Schneider

Benjamin M. Geyer

April 18, 2016

Date

METER, PHRASE, AND FORM
IN THE COMPOSITIONS OF MARIA SCHNEIDER

By

Benjamin M. Geyer

Richard C. Domek

Director of Dissertation

David W. Sogin

Director of Graduate Studies

April 18, 2016

ACKNOWLEDGEMENTS

This project would not have been possible without support from many people. First, I would like to thank my dissertation advisor, Richard Domek. Dick offered to be my advisor even in his retirement, and I am grateful for his uncountable hours of dedication. He has been a thoughtful and incisive reader, seeing through my ideas to their weaknesses and teaching me to rectify those weaknesses through careful development. His expectations made my project far better than I knew was possible. I can only hope to live up to Dick's example in my professional and personal life.

The Department of Music Theory at Kentucky provided an ideal balance of rigor and supportiveness. Karen Bottge frequently introduced me to perspectives that challenged my intellectual sensibilities, and it was only later that I began to realize how deeply those perspectives had infiltrated my thinking. Her careful attention to each chapter of this study contributed significantly to its development; her knowledge of the literature and the precision (and humor) of her editorial comments have been impressive. Michael Baker's research advice as a committee member and as a generous reader of my work has been invaluable. I am grateful for the patience he granted me in his two years as my course coordinator, which gave me the space I needed to develop as a classroom teacher. The opportunity to study twentieth century music independently with Kevin Holm-Hudson was a highlight of my time at Kentucky.

Raleigh Dailey took me on as a student, created performance opportunities for me, and lent his expertise to my committee. Committee members Ron Pen and Doug Kalika, as well as outside reader Andrew Maske, played important roles in this process. Hal Galper's unique insight into jazz performance practice echoes through these pages. I have worked with too many exceptional teachers to name, but I am grateful to every one of you.

Many of my peers at Kentucky, my colleagues at Oberlin Conservatory, and my friends from theory conferences have helped shape my work through innumerable interactions. The small community of music theorists who study jazz, many of whom are associated with the Society for Music Theory Jazz Interest Group, has provided a passionate intellectual home. I especially appreciate the time that Keith Waters, Patricia Julien, Stefan Love, Michael Schachter, and Nolan Stolz have taken to comment on previous research.

I would like to thank the University of Kentucky Friends of Music for providing me with a grant to purchase the scores necessary for the completion of this project.

Maria Schneider generously permitted me to print notation of her scores in this document and to interview her. I want to thank her for her unfailing commitment to the creation of exceptionally artful music. It has been a privilege to spend the last two years listening to every nuance of her pieces; no amount of repetitive listening could tire my enthusiasm for her work. As this process concludes, I believe that this project has allowed me to accomplish one of my initial goals: to learn composition from one of the most important voices in contemporary music.

I would like to thank my family and friends. My parents have always believed in me. They supported my career choice, were patient when I balked at their advice, and were graceful when I realized that they were right. I am grateful for my brother, Josh, and my friends, old and new: they have made me who I am. Jingles the cat has generously provided company, entertainment, and distraction.

I am lucky to have met Samantha. She always knows when to commiserate, when to give me perspective, and when to make me smile. Samantha, I hope you will keep me from taking myself too seriously for a long time to come.

TABLE OF CONTENTS

| | |
|--|------|
| Acknowledgements..... | iii |
| List of Tables | vii |
| List of Figures | viii |
| List of Files | ix |
| Chapter 1: Introduction | 1 |
| Purpose and Scope | 2 |
| Background: The Jazz Tradition | 3 |
| Factors Particular to the Analysis of Jazz | 6 |
| Selective Overview of Pertinent Literature..... | 11 |
| Methodology and Chapter Contents | 12 |
| Expected Results of the Study | 17 |
| Biographical Summary of Maria Schneider | 18 |
| Chapter 2: Attentional Coordination, from Tone to Phrase | 22 |
| Rhythm..... | 24 |
| Meter | 27 |
| Basic Definitions..... | 27 |
| Metrical Qualia | 32 |
| Metrical Rhetoric | 34 |
| Groove..... | 37 |
| Polyrhythmic Frameworks as Syncopation | 41 |
| Hypermeter | 51 |
| A Non-Recursive Model of Hypermetrical Perception | 55 |
| Two Types of Phrase: Structural and Melodic | 60 |
| Terminology..... | 60 |
| Metaphor and Schematic Representation..... | 62 |
| Structural Phrase Onset Rhetoric | 66 |
| Conclusion | 70 |
| Chapter 3: Phrase Rhythm in the Corpus..... | 73 |
| Part I: The Corpus..... | 74 |
| Corpus Overview | 74 |
| Rubato | 78 |
| Corpus Formation | 82 |
| Part II: Deviational Phrase Types | 85 |
| Subphrase and Ternary S-phrase | 89 |
| Subphrase | 89 |
| Ternary S-phrase | 91 |
| Addition | 92 |
| Held Bar | 93 |
| Empty Bar | 96 |
| Surge | 97 |
| Deletion..... | 99 |
| Unfulfilled subphrase..... | 99 |

| | |
|---|-----|
| Compression | 100 |
| Elision | 102 |
| Non-Isochronous Deviation | 103 |
| Deviational Mixed Meter | 103 |
| Free Meter | 104 |
| Misleading Metrical Cues | 104 |
| Rubato | 105 |
| Conclusion | 106 |
| Chapter 4: Form in the Corpus | 107 |
| Part I: Schneider's Formal Practices | 107 |
| Overview | 107 |
| Form in the Corpus | 113 |
| Part II: An Analysis of <i>Hang Gliding</i> | 122 |
| Conclusion | 144 |
| Chapter 5: Conclusion | 146 |
| Summary of the Study | 146 |
| Relevance to Future Research | 148 |
| Appendices | |
| Appendix 1: Critical Assessment of Literature | 152 |
| Appendix 2: Glossary | 159 |
| Bibliography | 162 |
| Discography | 169 |
| Scores Referenced | 170 |
| Vita | 171 |

List of Tables

| | |
|---|-----|
| Table 2.1, Beat-class integers | 50 |
| Table 2.2, Polyrhythmic frameworks in notable compositions | 51 |
| Table 3.1, Heading row and first row of data for <i>Evanescence</i> | 75 |
| Table 3.2, Summative data from <i>Evanescence</i> | 76 |
| Table 3.3, Corpus data summary | 77 |
| Table 3.4, The corpus by absolute time, including rubato | 80 |
| Table 4.1, Functional designs of formal Spaces | 114 |
| Table 4.2, Forms in the corpus | 116 |
| Table 4.3, Hermeneutical readings of the Solo and Recapitulation Spaces of three deviational forms | 118 |
| Table 4.4, Form of the Exposition Space in <i>Hang Gliding</i> | 134 |

List of Figures

| | |
|---|-----|
| Figure 1.1, Schneider’s vocal demonstrations of her first piano lesson | 19 |
| Figure 2.1, The metrical structure of 4/4 meter | 29 |
| Figure 2.2, A metrical structure | 30 |
| Figure 2.2a, coordination of pulse streams at different timespans | 30 |
| Figure 2.2b, repeating pattern of beat categories | 30 |
| Figure 2.3, “Tenor Madness,” Sonny Rollins, mm. 9-10 | 46 |
| Figure 2.4, Three layers of duple metrical structure | 52 |
| Figure 2.5, The non-recursive eight-bar hypermeasure | 55 |
| Figure 2.6, The second formal unit of the refrain of “Stormy Weather” | 61 |
| Figure 2.7, Visual schema for a normative eight-bar hypermeasure | 65 |
| Figure 3.1, The normative s-phrase with a corresponding m-phrase | 87 |
| Figure 3.2, The paradigmatic turnaround and two alternatives | 88 |
| Figure 3.3, Schema and notation of <i>Coming About</i> 10:43 / m. 261 | 90 |
| Figure 3.4, <i>Choro Dançado</i> 3:48 / m. 136 as ternary s-phrase | 92 |
| Figure 3.5, Held bar in <i>Wyrgly</i> 6:13 / m. 152 | 94 |
| Figure 3.6, Empty bars in <i>Night Watchmen</i> 8:40 / m. 214 | 97 |
| Figure 3.7, Schema for a surge deviation in <i>Concert in the Garden</i> 314 / m. 64 | 98 |
| Figure 3.8, <i>Bulería Solea y Rumba</i> 12:19 / m. 249 as an unfulfilled subphrase | 100 |
| Figure 3.9, <i>Coming About</i> 3:35 / m. 90 as a turnaround-based compression | 101 |
| Figure 3.10, An elision at <i>Green Piece</i> 7:06 / m. 253 | 102 |
| Figure 4.1, Typical overall form for traditional jazz arranging | 107 |
| Figure 4.2, Formal diagram of <i>Last Season</i> | 110 |
| Figure 4.3, Rhythmic reduction of the paradigm’s harmony in <i>Hang Gliding</i> | 124 |
| Figure 4.4, Exceptional version of the paradigm in <i>Hang Gliding</i> | 126 |
| Figure 4.5, Pitch paradigm, including the melody, for <i>Hang Gliding</i> | 127 |
| Figure 4.6, “Heartbeat” rhythmic pattern as in the introduction to <i>Hang Gliding</i> | 128 |
| Figure 4.7, Perceptual orientation towards the 3-3-3-2 | 130 |
| Figure 4.8, Paradigm iterations in the Exposition Space of <i>Hang Gliding</i> | 131 |
| Figure 4.9, Contrasting passages in the Exposition Space of <i>Hang Gliding</i> | 132 |
| Figure 4.10, Cadential figure with faux elision into the Solo Space to <i>Hang Gliding</i> .. | 135 |
| Figure 4.11, Waveform of <i>Hang Gliding</i> | 136 |
| Figure 4.12, Modal juxtaposition in <i>Hang Gliding</i> | 137 |
| Figure 4.13, The final s-phrase of the Solo Space in <i>Hang Gliding</i> | 139 |
| Figure 4.14, Theme at the onset of the Recapitulation Space in <i>Hang Gliding</i> | 140 |
| Figure 4.15, The bass descent as it appears in the Recapitulation Space | 141 |
| Figure 4.16, Final thematic statement in <i>Hang Gliding</i> | 142 |
| Figure 4.17, Rhythmic reduction of piano voices in the coda to <i>Hang Gliding</i> | 144 |

List of Files

Corpus_Data.xlsx, 266KB

Chapter 1: Introduction

This dissertation addresses meter, phrase, and form in a corpus of twenty-four pieces by jazz composer Maria Schneider (b. 1960), examining how experienced listeners translate real-time perception into structural comprehension. Schneider stands out for her professional accomplishments. She has earned five Grammy awards (including two in 2016), an honorary doctorate, and wide critical acclaim; she is in high demand as a guest conductor and commissioned composer. Her lineage is perhaps the most impressive of any living jazz composer based on her study with Bob Brookmeyer (1929–2011) and apprenticeship with Gil Evans (1912–1988)—two of the most important jazz composers of the preceding generations. Beyond these accolades, it is Schneider’s depth of artistry that makes her music worthy of scholarly attention.

Schneider’s compositions interact directly with the jazz tradition in many of their surface features. Most of her pieces are orchestrated for a core of traditional big band instrumentation as expanded through woodwind doubles, flugelhorns, and brass mutes, and other occasional additions such as accordion, auxiliary percussion, and voice. She hires musicians rooted in the jazz tradition, resulting in performances imbued with jazz inflection and articulation. Characteristics such as the centrality of the rhythm section, its ongoing grooves, and the emphasis on featured improvising soloists are also clearly drawn from jazz.

In addition to these surface features, several aspects of Schneider’s structural approach are also inherited from the jazz tradition. A majority of her phrases adhere to what I will define as the normative organization in mainstream jazz, and I contend that her techniques for deviation from that norm are representative of the current jazz

compositional climate. Her penchant for mixed meter reflects a trend among jazz musicians of her generation. Further, Schneider tends to compose in a what I call “three-Space” design, resonant with the most common overall plan in the jazz tradition—melodic statement, solo feature, and eventual melodic return.

If Schneider’s approach is particularly progressive in one area, it is in the individuality of the motional trajectories through which each piece unfolds the three-Space template. Schneider composes long-form works; the pieces considered in this study have an average playing time of 9 minutes, 23 seconds. She rarely repeats a single harmonic–metrical framework as is common in mainstream jazz, opting instead for a relatively through-composed technique that permits free development over time. As a result, the single most salient and characteristic aspect Schneider’s oeuvre is the expansiveness and flexibility of each piece’s motional trajectories.

Purpose and Scope

This study aims to examine the relationship between Schneider’s music and the structural principles of mainstream jazz and, in doing so, to deconstruct how an “experienced listener” might rely on cultural knowledge to comprehend structure in Schneider’s music as heard in real time.¹ I hypothesize that a significant majority of Schneider’s phrases either conform to normative phrase organization as established in mainstream jazz or directly interact with that norm. Schneider’s use of phrase deviation allows her to open creative space by systematically overriding normative phrase rhythmic

¹ Many theorists invoke the “experienced listener.” Listeners may be experienced to varying degrees, but my notion of the term is rather inclusive. I posit that most listeners encultured to Western popular and commercial music would find Schneider’s music largely comprehensible. The greater a listener’s expertise, however, the deeper her structural comprehension is likely to be.

organization. Nonetheless, these challenges to the norm generally do not undermine the comprehensibility of phrase rhythm in her music.

Adequate characterization of Schneider's music demands an accurate understanding of normative rhythmic principles in mainstream jazz, an endeavor treated as a nested issue in Chapter 2. Her oeuvre might seem an odd locus for the consideration of such basic rhythmic principles: her piece's surfaces are often complex, their vocabulary progressive, and their forms idiosyncratic. It is Schneider's historical position as an inheritor of the jazz tradition that makes her music a meaningful focus for this study: by demonstrating the persistence of normative principles even in Schneider's progressive aesthetic, I hope to underscore these principles' importance to the continued vitality of the jazz tradition.

Background: The Jazz Tradition

By the time Schneider was born in 1960, the structural principles and core performance practices of the jazz tradition had been codified into a relatively fixed system. Repertoires including Dixieland, swing, bebop, cool jazz, and hard bop differ drastically on the surface based on their distinct content vocabularies, but their principles of meter, phrase, and rhythm are remarkably consistent. As discussed in Chapter 2, the single most important aspect of rhythmic structure in these styles is that the overwhelming norm is for their structural phrases to be organized in eight-bar hypermeter. To oversimplify, measures tend to group in eights.

Against the backdrop of this norm, progressive jazz musicians began to establish alternatives to these structures and practices in a series of emergent sub-traditions; three are especially relevant here. First, free jazz reacted against normative rhythmic principles,

as represented by Ornette Coleman's groundbreaking albums beginning in the late 1950s.² This established a new precedent, enabling jazz musicians to deconstruct the previously universal norm for jazz ensembles to express a shared sense of regular meter.

A second emergent sub-tradition began with experiments in modal pitch organization in the 1950s, leading to Miles Davis's consequential album, *Kind of Blue* (1959).³ Soon after, Davis hired Wayne Shorter, whose progressive compositions for Art Blakey's Jazz Messengers had already begun to merge modes with chordal constructions, initiating the sub-tradition known as "postbop."⁴ Postbop usually retains the ensemble-wide uniformity of meter heard in earlier jazz styles, but its aesthetic of surprise challenges norms of harmony, melody, and form at every turn.

Jazz-rock fusion represents a third structurally distinct sub-tradition. On his album *Miles in the Sky*, for example, Miles Davis not only included the electric piano, but also did away with forms based on the cyclical repetition of a scheme (detailed in Chapter 2), creating a plane for the ongoing invention of content.⁵ Fusion compositions often develop a series of sections expansively, accumulating one after the next as form unfolds.

These developments have extended the structural palette of the jazz tradition, but the structures and practices established in earlier styles have also been retained to the present in a fourth, *mainstream* sub-tradition, which has remained a "*lingua franca*" of

² For example, Ornette Coleman, *The Shape of Jazz to Come*, Atlantic 1317-2, 1959, compact disc.

³ Miles Davis, *Kind of Blue*, recorded 1959, CK 64935, 1997, compact disc.

⁴ A representative album is Wayne Shorter, *Speak No Evil*, recorded 1964, CDP 7 46509 2 and DIDX 1120, 1987, compact disc.

⁵ Miles Davis, *Miles in the Sky*, Recorded 1968, CK 08954, 1993, compact disc.

jazz.⁶ Jazz musicians who scarcely identify with the mainstream are typically competent in its practices, which have long been canonized through the recorded history of the jazz tradition, institutions of jazz education and advocacy, participants in the music business such as venues and record labels, and musicians themselves.

At its most typical, the mainstream involves swing feel, improvising soloists, certain standard acoustic instrumentations, and specific styles of musical language. Any of these characteristics may be missing without disqualifying a token from the mainstream category; for example, Stan Getz and Joao Gilberto's *Getz/Gilberto* is not in swing feel but is certainly mainstream jazz.⁷ Mainstream jazz is best taken as a category against which individual examples may be more or less typical. While I will avoid a tight definition at this juncture, I would suggest that the structural principles laid out in Chapter 2 of this study are a step towards such a definition; in other words, music that is organized by these principles is likely to fit the mainstream category to some degree.

Although the mainstream has greater structural commonality to jazz styles through the 1950s than free jazz, postbop, and fusion, I am distinctly opposed to granting it a privileged status as a more rightful heir to those earlier styles. I would instead contend that the mainstream is one of four equally weighted sub-traditions that emerged from the stylistic fragmentation that occurred in the 1950s and 1960s. These four important sub-traditions—the mainstream, free jazz, postbop, and fusion—have continued to the present day in healthy lines of influence.

⁶ For “lingua franca,” see Stefan Love, “Subliminal Dissonance or ‘Consonance’? Two Views of Jazz Meter,” *Music Theory Spectrum* 35, no. 1 (Spring, 2013): 48.

⁷ Stan Getz and Joao Gilberto, *Getz/Gilberto*, Verve 8545, 1964, LP.

Beginning in the 1990s musicians saw decreasing need to restrict themselves to a single sub-tradition: many fruitfully draw from all four in their compositions and performances, freely blending them with any number of other styles. Their postmodern perspective has led to a breaking down of stylistic boundaries, obviating allegiance to one sub-tradition or another. It was in this cultural climate that Maria Schneider began her career.

Factors Particular to the Analysis of Jazz

Perhaps the greatest achievement of the jazz tradition is the significant community of active musicians who are capable of competently contributing to well-formed performances in cooperation with other such musicians. Successful group performances of mainstream jazz require compatible cultural knowledge in many domains, four of which stand out as particularly important in the context of this study: (1) the recorded history of the jazz tradition; (2) vocabulary, in the sense of content expressive of the “jazz language”; (3) repertoire, as the source of commonly shared formal frameworks; and (4) the operative structural principles of mainstream jazz. By sharing a frame of reference in these four areas, jazz musicians can make well-formed music together. Further, the more cultural knowledge a listener holds in these areas, the more “experienced” and nuanced a perspective she is likely to bring to the listening process.

This fourth domain of cultural knowledge—the structural principles of mainstream jazz—is one of the primary focuses of this study. Mainstream principles enable musicians to begin and end performances together, stay coordinated in time, share common dynamic trajectories, mark important moments, and collectively design an

overall form in real time through mutually negotiated decisions. As vocabularies have evolved, tunes have gone in and out of favor, and the recorded history has expanded, these principles remain, providing a unifying core and creating space for stylistic change even as they have constrained it.

The development of meaningful theory to explain these mainstream principles relies on accurate analysis, and an analyst's epistemological orientation has consequential ramifications for her results. Jazz performances involve many conceptual layers that must be isolated for culturally sensitive analysis. The misapprehension of these layers has led many positivistically oriented analysts to take the acoustic signal or its transcription as an autonomous object to be scrutinized. Without framing it against other conceptual layers, however, the consideration of an acoustic signal or its transcription risks one-dimensionality; this is a common shortcoming of jazz research.

Stefan Love's work on phrase rhythm makes strides in righting this problem. He notes, "In many styles of jazz . . . performance is based on two elements: a predetermined *scheme*—the meter, harmonies, and melody such as might be notated in a lead sheet—and the *realization* of the scheme in performance, which almost always involves a degree of improvisation (*italics in original*)."⁸ Love is not the first author to distinguish between scheme and realization, but the centrality he places on the *relationship* between these layers as the focus of his analyses is refreshing.

Lawrence Zbikowski's *Conceptualizing Music* also discusses the scheme as it occurs in jazz performance practice, situating it within a broader examination of how the

⁸ Love, "Subliminal Dissonance," 48.

mind interacts with music.⁹ Zbikowski identifies the scheme as an example of what he calls a “conceptual model.” Conceptual models are “part of the shared body of knowledge that constitutes culture” (109). He notes that “Models, once learned or created, are stored in memory and called up to organize our understanding of a given set of circumstances” (110).

Zbikowski observes that the conceptual model for a musical work serves as “a set of cognitive resources for performance, as a basis for negotiations on how musical practice should proceed, and as a focus for how musical practice can be regulated” (216). Zbikowski continues, “Performers who work within aural traditions base their performance of a given tune on a cognitive construct that is stored in memory and that represents essential features of that tune” (217). The scheme is not merely a set of chords in static relation to each other as represented on a lead sheet; it is a dynamic and flexible cognitive construct, commonly held by experienced listeners, that functions to both regulate the process of realization for performers and frame the resulting acoustic signal for listeners.

As a conceptual model, the scheme is an idealization: it exists in the mind and out of time. I propose that the act of “scrolling through” the scheme—the vested participation in realization as it happens in real time—is an analytical layer separable from both the scheme and the acoustic signal that I will call the “audiation stream.” Jazz musicians generate content through *audiation*—the internal imagining of music. Edwin E. Gordon has noted:

⁹ Lawrence Zbikowski, *Conceptualizing Music: Cognitive Structure, Theory, and Analysis* (Oxford: Oxford University Press, 2002).

Audiating while performing music is like thinking while speaking a language. Consider a jazz musician. Unless he can audiate, he cannot improvise. It is through the audiation of chord progressions and harmonies and the anticipation of forthcoming parts of a familiar song, for example, that a soloist is able to improvise an appropriate variation of the original melody of a song.¹⁰

In a sense, Love's "realization" has two components: the real-time, active construction of potentialities, which I call the audiation stream, and the end result of realization, which I refer to as the acoustic signal.

The acoustic signal itself is conceptually separable into content expressive of the scheme and other, more freely invented content. In mainstream jazz the *rhythm section* bears particular responsibility to express the scheme's features, creating an unambiguous layer of content serving as a common reference point for experienced listeners. As ensemble members simultaneously contribute to the acoustic signal, the rhythm section regulates and unifies the realization process, using common vocabulary to cue listeners' attention to important localities—namely, metrical accents at various levels. They allow each listener to coordinate her conceptual model of the scheme with the particular realization being collectively invented by an ensemble in real time. This contribution is a boon to the acoustic signal's comprehensibility: as listeners perceive the composite of all the musicians' inventions, the rhythm section demarcates how the various voices relate to each other and to the scheme. The rigidity and clarity of the rhythm section grants substantial freedom to the other musicians' inventions.

Positivistic analysis that does not fully recognize this source of freedom can mischaracterize the directness with which a soloist expresses the scheme's harmony through her melodic inventions. While melodic solos in styles such as bebop

¹⁰ Edwin E. Gordon, "Audiation, Imitation and Notation: Musical Thought and Thought About Music," *American Music Teacher* 38, no. 5 (April/May, 1989): 17.

characteristically correspond to the harmony, their harmonic expression may be opaque to the extent that the scheme—understood as a conceptual model and expressed directly by the rhythm section—contextualizes any ambiguity. Soloists invent content against the backdrop of the scheme, in full awareness that experienced listeners will frame this content against their conceptual model of the scheme with the aid of the rhythm section.¹¹

Experienced listeners familiar with a performance's underlying scheme have ongoing expectations about what might happen based on their own audiation streams.¹² Every participant's audiation stream is bound to be distinct, and no listener can predict exactly how the performers' audiated streams will translate into inventions. The realization that ultimately coalesces into the acoustic signal is one possibility within an infinite constellation of realizations that *could* have occurred based on the ongoing decisions of each musician. *When listeners assess the actualized acoustic signal in direct relation to the constraints of the scheme, they experience a sense of real-time discovery—in my view, the most central aesthetic value of the jazz tradition.* By overemphasizing the acoustic signal or its transcription, positivistic analyses fail to capture the cultural value that participants assign to this process. This dissertation strives for the utmost sensitivity to the relationship between the conceptual layers in theory and analysis.

¹¹ Even in the absence of a rhythm section, as in a solo saxophone improvisation, listeners' knowledge of the scheme shapes their understanding of the acoustic signal.

¹² Gordon distinguishes five "stages" of audiation; in his "Stage V," the listener is "consciously predicting in audiation patterns of essential notes that he will hear next in the piece of familiar or unfamiliar music that he is aurally perceiving." Gordon, "Research Studies in Audiation: I," *Bulletin of the Council for Research in Music Education*, no. 84 (Fall, 1985): 36.

Selective Overview of Pertinent Literature

Some readers will detect in my upcoming discussion a notable absence of certain well-regarded music theory sources that deal with meter, hypermeter, and phrase rhythm. In particular, my accounts of meter and phrase in Chapter 2 omit reference to Christopher Hasty's *Meter as Rhythm* and William Rothstein's *Phrase Rhythm in Tonal Music*.¹³ Both are foundational to their respective lines of inquiry, authoritative, and impeccably presented. I have scarcely referenced these studies, however, because they do not, and were never intended to, address jazz. Their most basic assumptions are not compatible with the perspective on the jazz tradition advanced in the present study, as described in the preceding section, "Factors Particular to the Analysis of Jazz."¹⁴

This study relies instead on theories that specifically address jazz, in particular, or music, in general. Stefan Love has worked substantially, and with a comparable epistemological bent, on meter and phrase in jazz.¹⁵ Whereas his work deals with mainstream jazz and assumes normative phrase rhythm, the present study examines how a composer may deviate from the norm while retaining its comprehensibility. The two best examples of theories that address music in broad terms in a manner transferable to this study are Lerdahl and Jackendoff's *Generative Theory of Tonal Music* and Justin London's *Hearing in Time*.¹⁶ Both of these monographs treat meter as a human behavior,

¹³ Christopher F. Hasty, *Meter as Rhythm* (New York: Oxford University Press, 1997); William Rothstein, *Phrase Rhythm in Tonal Music* (Ann Arbor: Musicalia Press, 2007).

¹⁴ For a detailed account of these incompatibilities, see Appendix 1, p. 152.

¹⁵ Love, "Subliminal Dissonance"; Love, "On Phrase Rhythm in Jazz," Ph.D. diss., Eastman School of Music, 2011; Love, "An Approach to Phrase Rhythm in Jazz," *Journal of Jazz Studies* 8, no. 1 (Spring, 2012): 4–32.

¹⁶ Lerdahl and Jackendoff, *Generative Theory*; Justin London, *Hearing in Time: Psychological Aspects of Musical Meter*, 2nd ed. (Oxford: Oxford University Press, 2012).

focusing on the interaction between listener and acoustic signal; Lerdahl and Jackendoff also address issues of phrase and hypermeter from the listener's perspective.

These studies apply differing strategies in avoiding bias towards a particular stylistic idiom. Lerdahl and Jackendoff explicitly differentiate between aspects of their theory that are specific to the European common practice and those that are universal.¹⁷ They mitigate bias by explicitly identifying it. In an alternative strategy, Justin London includes discussions and examples regarding many different repertoires of diverse origin throughout his monograph. In a telling passage assessing historical sources on meter, London writes:

Two things should be kept in mind when considering these historical sources on metric well-formedness. The first is that they are almost always highly prescriptive: they make claims about how meter *ought* to be. Indeed, many of these sources are student composition manuals, and metric prescription is part and parcel of their pedagogical orientation. Second, their prescriptions are drawn from the authors' native musical practice, such as nineteenth-century Viennese classical music in the case of Hauptmann and Weber. Only in recent years have theories of meter taken cross-stylistic and cross-cultural differences into account.¹⁸

It is my hope that this dissertation will contribute to this endeavor of "cross-stylistic and cross-cultural" study through its specificity and accuracy in accounting for mainstream jazz and Schneider's oeuvre.

Methodology and Chapter Contents

This study proceeds from shallow levels to deep considerations—from the perception of pulse to that of overall form. Rather than dealing with Schneider's music directly at the outset, Chapter 2 addresses norms in mainstream jazz, advancing various concepts important to rhythmic organization in structural levels from the surface to the

¹⁷ "Note: Rules marked with an asterisk are idiom-specific. We believe the rest are universal." Lerdahl and Jackendoff, *Generative Theory*, 345.

¹⁸ London, *Hearing in Time*, 88–89.

phrase. It addresses the theoretical categories of rhythm and meter and characterizes their relationship, defining numerous related technical terms and proposing new terms as appropriate. These endeavors aim to establish a background for the consideration of Schneider's music, which, I claim, interacts with these principles.

Chapter 2 further proposes a non-recursive model of hypermeter, arguing that various metrical levels depend on different types of expectation: cultural familiarity permits the comprehension of pulse into idealized metrical grids up to the measure level, the cycling of "metrical qualia" at the measure level forms into the four-bar hypermetrical sub-unit, and the expectation for sub-units to pair creates the eight-bar hypermeasure. I propose that the "polyrhythmic framework"—a brand of syncopation at the core of jazz's rhythmic vocabulary—contributes to (rather than undermining) pulse perception through its general clarity of "acoustic gestalt." The chapter distinguishes between three theoretical constructs at the phrase level of structure: the "structural phrase" (s-phrase), "melodic phrase" (m-phrase), and hypermeasure, positing that a particular structural phrase design is overwhelmingly common in mainstream jazz and therefore serves as a basic stylistic norm. I propose the concept of "structural phrase onset rhetoric" (SPO rhetoric), the perceptible signaling of structural phrase divisions, as a central tenet of the theory.

Chapters 3 and 4 depend on a corpus study of twenty-four of Schneider's compositions.¹⁹ After selecting these pieces I imported the studio recording of each composition into Audacity, a digital audio workstation, and annotated each recording's

¹⁹ For discussion of corpus studies, see David Temperley and Leigh VanHandel, "Introduction to the Special Issues on Corpus Methods," *Music Perception: An Interdisciplinary Journal* 31, no. 1 (September, 2013): 1–3.

waveform with the software's "label" function. Based on repeated hearings with the specific aim to identify the locality of each structural phrase, I labeled each "structural phrase onset" according to the theory of phrase rhythm developed in Chapter 2.

The result was a series of twenty-four Audacity files with labels containing several types of data for each structural phrase: its timestamp, number of measures, alphabetical codes for any operative phrase deviational devices, and other annotations. These annotations include alpha-numeric schemas detailed in Chapters 2 and 3, employed to label the particular layout of each deviational structural phrase. I repeated this process in innumerable passes through the entire corpus as well as focused, repetitive auditory examination of each piece and its constituent passages.

I consulted scores only after annotating most of the Audacity files by ear alone, and I used those scores to compare my audio-based interpretations with the score notation as produced by Schneider (through an intermediary copyist).²⁰ Where the score contradicted my original listening-based interpretation, I retained my original hearing in the Audacity labels in cases of ambiguity, reflecting the listener-oriented intent of this study; when the scores revealed mishearing on my part, I changed the Audacity labels to match the scores. Due to the general comprehensibility of Schneider's music, such challenges were exceedingly rare (fewer than twenty of the 1,105 structural phrases).

The distinction between ambiguity and mishearing is a gray area; my procedure was to listen to such passages many times, mentally toggling back and forth between my original hearing and the interpretation suggested by the score. After making every effort to "empathize" with the score—to hear the music from that perspective—I decided

²⁰ Personal Communication, June 9, 2015.

whether to change the Audacity annotation. I established the decision-making guideline that the burden of proof was on the score to establish that its interpretation was preferable to my audio-based interpretation, and I retained my original hearing unless I found it to be errant to the point of being unlikely for a typical experienced listener. In a sense, this assumes that I am a token of the “experienced listener” category. Therefore my original hearings were preferred in the context of this study, which is centrally concerned with how experienced listeners engage with an acoustic signal. Further, I take the recording—not the score—to be the proper text to consider.

After the Audacity labels were fixed as analytical results, I exported the labels into Microsoft Notepad and subsequently imported those Notepad files into a Microsoft Excel workbook. The data from each Audacity label appear as a single spreadsheet row representing a single structural phrase, with columns for the various data categories embedded in each label. Using Excel’s built-in functions I created additional columns indicating each phrase’s absolute duration and average tempo. I refer to these results, as presented in the linked [“corpus data”](#) file, as “phrase-by-phrase tables.” In each of these phrase-by-phrase tables I color coded the rows to indicate formal categories; the comparative examination of these twenty-four forms led to the theory of form offered in Chapter 4.

I collated the data from the phrase-by-phrase tables into summative tables for each piece that describe basic information (e.g., total number of bars) and tally the number of each type of deviational device. In turn each piece’s summative table is collated into various tables summarizing the data from the entirety of the corpus study,

providing a big-picture perspective of the twenty-four pieces as a window into Schneider's compositional practice in these works.

Based on the corpus analysis, Chapter 3 presents a taxonomy of twelve deviational devices, contextualizing the proportional prevalence of the normative structural phrase (as defined in Chapter 2) and each deviational device. I describe each deviational device in prose, offer notation of a typical example from the corpus, and schematize each of these examples according to a container schema (representing its structural phrase) in coordination with an arrow schema (representing its melodic phrase).

Chapter 4 shifts to the deeper structural levels of the section, Space, and overall form.²¹ It establishes the tendency in Schneider's work for a "three-Space" design including Exposition, Solo, and Recapitulation Spaces. These Spaces are made up of seven constituent sections types representing a shallower formal level: expository, soloistic, recapitulatory, introduction, transition, ensemble feature, and coda. Three formal division criteria designate specific means through which the emergence of each new Space is made perceptible.

A discussion of the sectional and Spatial designs of the pieces under consideration demonstrates that only four of the twenty-four pieces in the corpus diverge from the basic expectations engendered by the formal division criteria. I analyze three of these pieces through a narrative-based, hermeneutical approach, offering a glimpse into the mechanisms that Schneider uses to strategically play on listener expectations for expressive ends. The chapter concludes with a substantial analysis of *Hang Gliding*, a

²¹ "Space" is capitalized as an orthographical distinction between terms to be introduced in Chapter 4.

piece representative of Schneider's distinctive formal approach, demonstrating the sense of motional trajectory so crucial to her compositional style.

While Chapter 2 addresses rhythm in the jazz tradition in general and Chapter 3 should be taken as *representative* of the jazz tradition, Chapter 4 suggests what makes Schneider's compositional approach distinctive and effective.

This study takes particular advantage of the nature of Schneider's recordings as texts. She rehearses the ensemble and oversees its performances as captured in recording sessions, granting these recordings a level of authority unavailable for composers who died before the advent of recording technology (e.g., Beethoven); we simply do not know how Beethoven would have wanted his works to sound. And unlike most jazz, rock, or popular artists, Schneider's compositions are documented in scores, which are readily accessible on her website. Thus the amount of musical information on which this study has relied is exceedingly rare in relation to other artists.

Expected Results of the Study

At its inception, this project concerned form in Schneider's works, and particularly the sense of motional trajectory that is so important to form's unfolding in her music. The focus on local rhythmic levels developed from my recognition that the synoptic perspective on form typical in the music theory literature seemed incompatible with the experience that I had when I first saw the Maria Schneider Orchestra in concert.²² I had never seen the score and knew only a few recordings, and therefore had

²² James Webster invokes Kurt Westphal's distinction of "Form" (synoptic shape) from "Formung" (processual experience), noting that "form" is privileged over "Formung" in the literature. James Webster, "Sonata Form," in *The New Grove Dictionary of Music and Musicians*, 2nd edition, ed. Stanley Sadie and John Tyrell, vol. 2 (London: Macmillan,

no specific expectations regarding how each piece would unfold. What I did possess, however, was expertise as a jazz musician—I was an experienced listener of mainstream jazz—and that expertise permitted me to comprehend the direction of Schneider’s phrases and the expressive effects that she achieved through deviation.

As the project developed I increasingly realized that the sense of real-time discovery that I experienced at this concert had broad implications for jazz scholarship. Real-time discovery is a central aesthetic value of participants, and analytical practice ought to reflect the values of cultural insiders. I realized that the positivism marking the jazz literature often overlooked this aesthetic value, and the underlying goal of characterizing the translation of real-time experience into structural comprehension thus emerged as an important aspect of this study.

From the outset I considered Schneider to be an inheritor of the jazz tradition, and likely representative of the current styles of jazz composition, even if an exceptionally skilled one. On one hand, I continue to think of Schneider as representative of the current climate in terms of her phrase-level rhythmic organization, harmonic and melodic idioms, and the surface features of her music—instrumentation, grooves, solo features, etc. On the other hand, however, I was somewhat surprised to find that her formal approach is, to my knowledge, unique.

Biographical Summary of Maria Schneider

Many of Schneider’s pieces evoke scenes from her small, Midwestern hometown of Windom, Minnesota. Schneider studied the piano with Evelyn Butler from ages 5–17; she frequently cites Butler as one of her most impactful influences. Schneider notes the

2001), 688. Reported in Samuel Ng, “Phrase Rhythm as Form in Classical Instrumental Music,” *Music Theory Spectrum* 34, no. 1 (Spring, 2012): 51n6.

unlikelyhood of her access to someone like Butler, a professional stride and classical pianist based in Chicago before moving to Windom to live with her daughter.²³ Butler’s piano lessons emphasized music theory, surpassing the descriptive labels often discussed in childhood piano lessons to address issues of expression:

[At] my very first piano lesson when I was a kid, my teacher did, “bright the day, dark the night” [sings Figure 1.1a]. [She emphasized,] “Everything in music has a feeling and I want you to understand why your music feels the way it feels. You’re gonna learn something called ‘theory.’” She did that to me at age five. And for I–IV–V chords, she went, “here we go, up the hill, back again, home” [sings Figure 1.1b] to show that IV goes up the hill, V goes back again home.²⁴

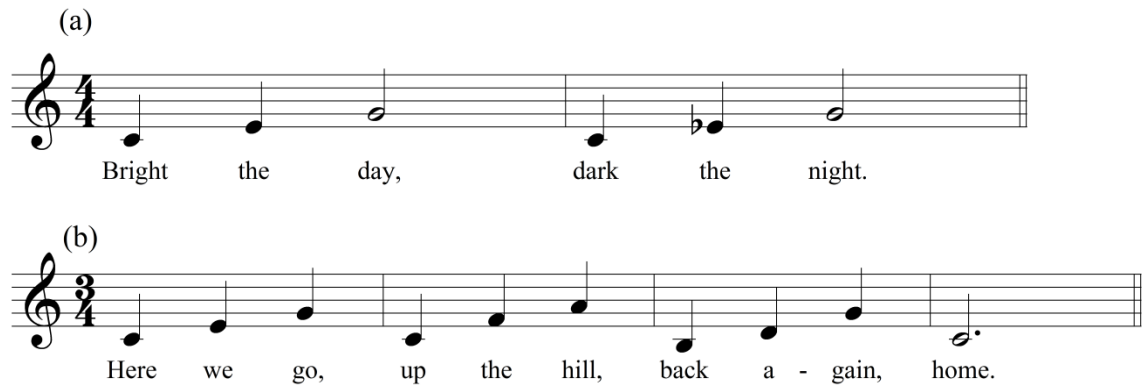


Figure 1.1 Schneider’s vocal demonstrations of her first piano lesson

The ongoing importance of Butler’s framing of music as an expressive act is apparent in

Schneider’s discussions of her work. She continues:

I’ve been doing stories and feelings to my music since I wrote my first songs, which were ridiculous little songs. ... I have always thought about music as expression, and just groping around for the right colors and sounds to get that, and analyzing it later, quite frankly.²⁵

²³ Fred Sturm, “Interview with Maria Schneider” in Maria Schneider, *Evanesence*, ed. Fred Sturm, v–xii (Universal Edition, 1998), vi.

²⁴ Phone interview, June 9, 2015.

²⁵ Ibid.

Schneider studied Theory and Composition at the University of Minnesota before entering graduate school at the University of Miami, where she studied for one semester. She transferred to the Eastman School of Music, earning her master's in jazz composition. The opportunity to study jazz composition at a graduate level was relatively new, and this aspect of Schneider's background reflects the trend toward the rapid expansion in institutionalized jazz education that began around the early 1970s.²⁶

This technical training is apparent in her music, but she continued to further her artistic development by securing a National Endowment for the Arts grant to study with Bob Brookmeyer. Brookmeyer was a notable valve trombonist, working in small groups with prominent musicians such as Gerry Mulligan and Clark Terry. While he was an important member of the jazz scene as a performer, Brookmeyer is perhaps known better for his modern compositions for big band instrumentation. Schneider notes that Brookmeyer helped her question her compositional choices, encouraging her to follow the needs of each piece rather than her inherited or ingrained habits.²⁷

Schneider was later employed by Gil Evans, whose collaborations with Miles Davis established him as the most prominent modern jazz composer of his era. She worked as his copyist, but as journalist Ben Ratliff notes, "he never helped her directly with her music—she didn't presume to ask."²⁸ Nonetheless, Schneider suggests the subtle impact that Evans made on her:

One time I observed him sitting at the keyboard playing a three-note cluster over and over softly for a very long time as if to absorb it to be sure it was right.

²⁶ Henry Martin and Keith Waters, *Jazz: The First 100 Years*, 3rd edition (Boston: Schirmer, 2012), 348–49.

²⁷ Fred Sturm, "Interview," vii.

²⁸ Ben Ratliff, *The Jazz Ear: Conversations Over Music* (New York: Times Books, 2007), 74.

Suddenly he handed me the manuscript, not as if he resigned himself to those notes but as if, after weighing every aspect of that sonority, he knew for sure it was right.²⁹

After composing for the Mel Lewis Orchestra (still presently operating as the Vanguard Jazz Orchestra) Schneider formed a band with John Fedchock in 1989.³⁰ By 1997, under her singular directorship, her band had established a residency at the club, *Visiones*.³¹ The formation of her band contributed to the development of her compositional voice, which was relatively mature even in her first album, *Evanescence*, recorded in 1992.³²

Schneider's recorded output includes six studio albums and a live album by her own ensemble, as well as a pair of song cycles written for soprano Dawn Upshaw and chamber orchestra. She also recently composed the accompaniment for the David Bowie song, "Sue (Or in a Season of Crime)," shortly before his death (members of her ensemble subsequently served as the backing band for his final album).

Schneider's music is fearlessly personal, constantly reflecting her expressiveness as nurtured by her childhood piano teacher. Besides her childhood memories, her pieces often evoke experiences gained in traveling (both in expressive content and in stylistic influence) and the pleasure she takes in her hobby of birdwatching. Her pieces are generally as emotionally rich as they are technically successful at every level, from minute detail to formal design.

²⁹ Sturm, "Interview," vi–vii.

³⁰ Max Harrison, Eric Thacker, and Stuart Nicholson, *The Essential Jazz Records*, Vol. 2, "Modernism to Postmodernism," (London: Mansell Publishing, 2000), 245.

³¹ *Ibid.*, 246.

³² Sturm, "Interview," viii.

Chapter 2: Attentional Coordination, from Tone to Phrase

Chapter 1 argued for the isolation of the scheme, audiation stream, and acoustic signal as distinct analytical layers. It further noted the conceptual division of the acoustic signal into two types of voices: (1) those expressive of the scheme, particularly in the rhythm section; and (2) those with a greater degree of freedom from the scheme. Based on these conceptual divisions, Chapter 2 aims to develop a cohesive theory of rhythm in mainstream jazz, accounting for all of its operative layers and their mutual interaction.

A central premise of this study is that hypermeter mediates the experience of listening to mainstream jazz, guiding attention and situating the listener within the unfolding acoustic signal. The eight-bar level of hypermeter is particularly important due to the extreme frequency with which it occurs. Its perception depends on lower metrical levels and cultural familiarity with the rhythmic norms of mainstream jazz. At a low level, metrical entrainment behavior permits the perception of the measure. Measures cycle through qualia (the feelings associated with each beat), normatively forming four-bar sub-units. These sub-units carry the overwhelming expectation that they will group, in pairs, into eight-bar hypermeasures.

Through this process, low-level metrical perception accumulates into successively deeper levels, permitting the translation of the listener's audiation stream into structural comprehension of the acoustic signal. As a result, a phrase-level formal unit that I call the "structural phrase" emerges. The structural phrase is the most important formal unit for the structural comprehension of jazz in real time listening: it is the level at which sound, as perceived, coalesces into structure, as mentally constructed. The structural phrase is the longest *musical* span that can be perceived in a single *attentional* span; it is

simultaneously the deepest of *local* rhythmic levels and the shallowest of *formal* rhythmic levels.

Structural phrases are normatively organized as eight-bar hypermeasures. This normativity is responsible for the structural phrase's comprehensibility to experienced listeners, not only in mainstream jazz, but also in more progressive repertoires that interact with the mainstream's norms. Most of Maria Schneider's phrase-deviational devices, as discussed in Chapter 3, depend on cultural knowledge of these norms.

Against the backdrop of rigid meter, improvised inventions are ubiquitously organized as what I call "polyrhythmic frameworks," additive rhythmic structures mixing durations in a 2:3 ratio and readily crossing barlines. Polyrhythmic frameworks have a sense of hierarchical structure, but they are not metrical because they most often are not periodic.

In general, the principles discussed in this chapter should not be taken as special cases, but instead as norms that guide experienced listeners in their hearing of the music. This is not to say that alternative structures are ill-formed or unacceptable within the jazz tradition. It is my hope, however, that the elucidation of normative practice in the mainstream can provide a backdrop against which the meaning of alternative procedures may be understood.

This chapter draws from disparate perspectives including music theory, ethnomusicology, cognitive science, and music performance as necessitated by the dearth of rigorous literature on rhythm in jazz. Even in the broader field of music theory, issues of rhythm are less developed than issues of pitch, as evidenced by the relatively smaller proportion of the literature devoted to it. Further, many of the most central sources on

rhythmic issues focus so heavily on European classical music that they are scarcely applicable to jazz; one is struck by the idiom-specific premises underpinning even the most implicitly “universal” of studies.¹ While prior scholars have made progress on individual facets of jazz-specific rhythmic theory, it seems that no single source as of yet accounts for all of the pertinent issues. It is my hope that this chapter will make strides toward such an account.

Rhythm

Rhythm, as understood in this study, is a matter of when sounds occur. The most basic unit of rhythm that we experience musically is the *tone*, the physical sound of a single acoustic utterance. Most tones include several *events*, which, considered broadly, may include any audibly marked moment in a musical texture—the onsets (or attacks) and releases of tones, or even the apex of a dynamic swell. More narrowly, though, discussions in music theory and practice tend to be limited to the consideration of tone onsets, which is likely attributable to their greater perceptual salience.² The present study, too, will typically refer to tone onsets alone in its discussion of rhythm, but it is a running assumption that other events (releases and dynamic apexes) are crucial to the richly nuanced experience of listening to music.

Rhythm refers to the locality of events in time and the temporal relationships between those events. An event’s *locality*, its place in time, can be measured and compared to the locality of other events through two types of representation: (1) relative

¹ See Appendix 1, p. 152.

² Eric Clarke, “Rhythm and Timing in Music,” in *Psychology of Music*, 2nd edition, ed. Diana Deutsch, (New York: Academic Press, 1999): 473–500. Reported in David Huron and Ann Ommen, “An Empirical Study of Syncopation in American Popular Music, 1890–1939,” *Music Theory Spectrum* 28, no. 2 (Fall, 2006): 211–231.

and (2) absolute.³ *Relative representation* situates an event in relation to other events, usually based on low-integer ratios. These ratios form the conceptual basis of Western notation; for example, the ratio of the duration of a quarter note to that of an eighth note is 2:1.

Absolute representation involves the quantification of a locality, often through its time stamp, a measure of the time elapsed since the beginning of a digitally reproduced acoustic signal such as a recording (e.g., the time readout on an mp3 player). With the aid of technology, it is possible to determine an event's time stamp with accuracy on the order of ± 5 milliseconds (ms).⁴ In absolute representation, relationships between localities are represented according to "inter-onset intervals" (or IOIs), the absolute value of the difference between the time stamps of two particular localities.

As musicians perform, the proportions between successive IOIs do not produce the low-integer ratios that the relative representation of Western notation would suggest. Instead, performers imbue sequences of tones with constant and subtle variation in IOI. Relative representation is less precise than absolute representation, but it is far more useful for most composers, performers, and music theorists because its generality leaves room for aesthetically desirable human interpretation and gives the proper level of specificity for real-time performance. In contrast, absolute representation tends to be useful for music psychologists and a subset of music theorists whose work involves detailed consideration of this natural variation in IOI.

³ Henkjan Honing, "Structure and Interpretation of Rhythm in Music," in *The Psychology of Music*, 3rd edition, ed. Diana Deutsch (Amsterdam: Academic Press, 2013), 374.

⁴ Matthew Butterfield, "Why do Jazz Musicians Swing Their Eighth Notes," *Music Theory Spectrum* 33, no. 1 (Spring, 2011): 8n33.

The incongruity between the nuanced variation of real performance and the low-integer proportionality of notation suggests a dichotomy between two aspects of rhythm that John Slodoba has termed “expression” and “structure.”⁵ Whereas rhythmic *expression* refers to high-resolution timings between tone onsets, rhythmic *structure* is the low-resolution summary of particular rhythms into values related by low-integer ratios. In general, Western composers imagine rhythms expressively and convert them into structures, rounding them to the nearest note value according to the limits of Western notation. In reading this notation, performers realize the music expressively, as filtered through the normative performance practices of an appropriate tradition, preferably the tradition that the composer had in mind. Expressive deviations from structure are unavoidable by human (i.e., not computerized) performers even when they attempt to produce a robot-like performance; in fact, such deviations are aesthetically important to musical experience.⁶

The expression–structure dichotomy is perhaps especially apparent within the context of certain notated musical traditions such as Western classical music. For musicians in such traditions, notation is typically a central component of their training, leading particular relative representations to become a mode of musical conceptualization. Jazz musicians also rely on this mode of conceptualization since they, too, are typically exposed to Western classical notation, using it as an aid to practice and performance. Because these musicians read, write, and speak in terms of the rhythmic

⁵ John A. Slodoba, “Expressive Skill in Two Pianists: Metrical Communication in Real and Simulated Performances,” *Canadian Journal of Psychology* 39 (1985): 273–93, reported in Justin London, *Hearing in Time: Psychological Aspects of Musical Meter* (New York: Oxford University Press, 2012), 177.

⁶ The unavoidability of expressive rhythm is reported in London, *Hearing in Time*, 205n1.

values of Western notation, they think in those terms as one thinks in a language.

Musicians of styles that are not dependent on reading notation likely rely on different conceptual metaphors in thinking of rhythmic relationships between tones.

The *timing* of an event is the deviation between its expected locality, based on the rhythmic structure, and its actual locality, as expressively performed. As an example, we can discuss the IOI between the onset of one tone and the *expected* onset of the subsequent tone. A particular musical context might lead a listener to expect that a particular tone, *x*, will be followed by a subsequent tone, *y*, after 500 ms. If a performer instead places *y* 520 ms later than *x*, the deviation of 20 ms from the listener's expectation for tone *y*'s locality is not great enough to effect the structural understanding of the two tones. The deviation does, however, give the succession of tones a certain expressive effect. Henkjan Honing notes that "both types of information, the rhythmic pattern *and* expressive timing, are available at the same time, with the categorization functioning as a reference relative to which timing deviations are perceived."⁷

Meter

Basic Definitions. Many musical passages are organized with rhythmic structures that encourage the emergent perception of "meter." At relatively low structural levels, a cognitive process called "entrainment" permits the experience of meter.⁸ A theory widely accepted within the discipline of music psychology, *entrainment* refers to the ability of humans to "time their attention to events in the world by adapting an internal rhythm (a

⁷ Honing, "Structure and Interpretation," 375.

⁸ Meter at higher structural levels will be discussed below.

neural oscillation of attentional energy) to note onsets.”⁹ Whereas “rhythm” refers to the temporal aspects of tones as physical sounds, *meter* refers to attentional behavior that arises in interaction with an acoustic signal.

This synchronization between brain activity and external rhythms allows listeners to anticipate certain moments that are, in the cases of Western classical music and jazz, hierarchically important in the context of a passage. Human attention naturally fluctuates, and entrainment encourages the temporal coordination of attentional high points among multiple listeners. Composers and improvisers may take advantage of this behavior by guiding listeners into common modes of hearing, situating the most important information (such as harmonic changes) at attentional peaks.

Certain rhythmic structures encourage metrical entrainment, allowing a listener to abstract the rhythms heard in an acoustic surface into what I will call a “metrical structure.” While a rhythmic structure consists of all the tones of an acoustic signal, a *metrical structure* consists of a recognizable pattern idealized from the acoustic signal. In translating a rhythmic structure to a metrical structure, listeners match the acoustic signal to the understood pattern, interpreting expressive timings and adding or omitting components. Although metrical structures are idealizations, they are no less a real part of musical experience than the expressive aspect of rhythm. Performers have metrical structures in mind even while they diverge from them expressively, and experienced listeners abstract expressively adorned acoustic surfaces into metrical structures as a matter of course. Multiple performances may yield identical metrical structures even despite vast differences in rhythmic structure.

⁹ Siu-Lan Tan, et al, *Psychology of Music: From Sound to Significance* (Hove and New York: Psychology Press, 2010), 105.

Figure 2.1 visualizes an idealized representation of 4/4 meter, one type of metrical structure that may be reduced from an expressive surface. I use dot notation, from Lerdahl and Jackendoff, to map metrical organization: time is represented horizontally and hierarchical importance is represented through the number of vertically aligned dots.¹⁰ Each horizontal row of dots represents a *pulse*, a rhythmic structure at a certain timescale that is perceived as being isochronous (equally timed).

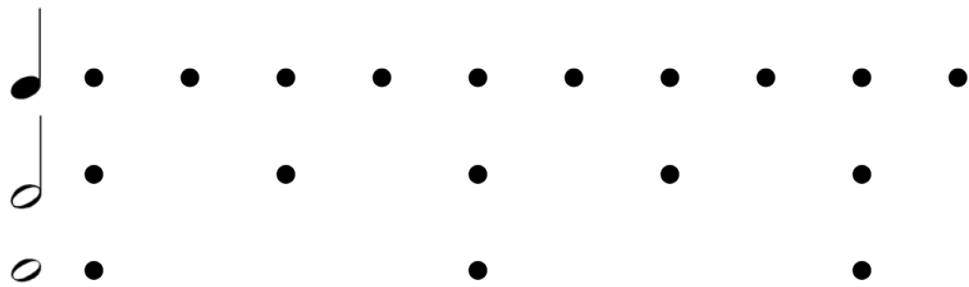


Figure 2.1 The metrical structure of 4/4 meter

Not all pulses have equal perceptual salience, and a particularly privileged level known as the “tactus” guides our attention most directly. The *tactus* is the level of pulse to which we typically tap our feet, dance, or conduct. We pick out the tactus from the various pulses in a metrical structure according to its time-scale, tending to hear the tactus at no slower than 40–50 beats per minute (bpm) and no faster than 150–160 bpm, depending on the account.¹¹ This leaves room for ambiguity of tactus level; for example, a quarter note of 110 bpm and a half note of 55 bpm could easily coexist within the same

¹⁰ Lerdahl and Jackendoff, *A Generative Theory of Tonal Music* (Cambridge, Mass.: The MIT Press, 1983), 18–19.

¹¹ London’s “beat cycle” (his term for tactus) is between about 400 and 1200 ms or 50–150 bpm (*Hearing in Time*, 92). Lerdahl and Jackendoff’s tactus range is 40–160 bpm (*Generative Theory*, 73).

metrical structure, and different listeners might perceive either level as the tactus.

Cultural experience with a style may guide a particular listener into favoring one level over another as tactus. Further, a single listener may toggle between tactus levels in an ambiguous context.

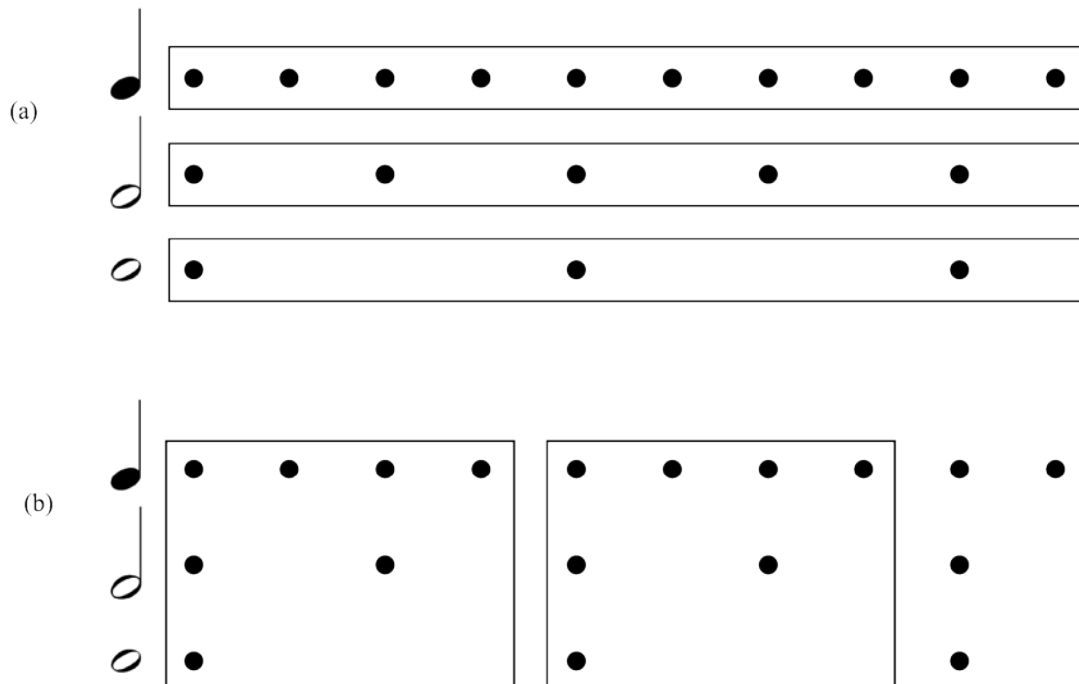


Figure 2.2 A metrical structure: (a) coordination of pulse streams at different timespans; (b) repeating pattern of beat categories.

Two aspects of dot notation characterize metrical patterns. First, each horizontal row of dots, boxed in Figure 2.2a (above), represents a pulse at a different structural level. Lerdahl and Jackendoff write, “It is the interaction of different levels of beats [my pulses] . . . that produces the sensation of meter.”¹² From Justin London’s perspective, “Metric entrainment involves a coordinated set of attentional periodicities on different

¹² Lerdahl and Jackendoff, *Generative Theory*, 68.

time scales.”¹³ Each pulse level represents a different duration in relative representation, as indicated to the left side of the figure.

Coincidences between pulses at different levels appear as vertical alignments between the dots of different rows, indicated by the boxes outlining groups of dots in Figure 2.2b. These boxes reveal a second aspect of this figure’s geometry: the recurring pattern of various beat types, as characterized by different numbers of vertically aligned dots. This figure includes beats with one, two, and three dots, organized into the pattern, 3,1,2,1. Unmitigated entrainment requires *periodicity*; patterned rotation through beat types is a necessary condition for its perception.

Usage of the terms pulse, beat, and tactus varies in the literature on meter. In this study, these terms are related, but they relay different nuances of meaning. “Pulse” refers to any level of the metrical structure. “Tactus” specifically denotes pulses in the range of tempos from 40–160 bpm, as limited by perceptual constraints. “Beat” has a different connotation from tactus for three reasons. First, beats have a particular locality within a metrical structure, as in “beat 1” or “beat 4”; there is no “tactus 4.” Second, while the beat has the same time-scale as the tactus within the present discussion, we will see in the discussion of hypermeter, below, that the notion of beats applies to pulse levels outside of the tactus range.

A third difference between “beat” and “tactus” is that beats are hierarchically differentiated according to their degree of “metrical accent.” *Metrical accent* results from the listener’s expectation for a hierarchically important event to occur at a particular locality: the greater the expectation, the greater the accent’s strength. In Lerdahl and

¹³ London, *Hearing In Time*, 24.

Jackendoff's dot notation, the strength of a metrical accent corresponds to the number of vertically aligned dots; in the entrainment model, accentual strength corresponds to the amount of attention afforded to a locality. In the following paragraphs I argue that differentiations between beats is a matter of more than just the *degree* of accentual strength: each beat in a metrical structure has a particular feeling, or "qualia," as we experience it.

Metrical Qualia. Borrowed from philosophy, *qualia* refers to "the introspectible, phenomenal, subjective character of conscious experience."¹⁴ David Huron discusses the qualia of various scale degrees, finding that, for example, musicians describe the tonic as "stable," "satisfying," and "centered," and the leading tone as "unstable," "uncomfortable," and "squirmy."¹⁵ He mentions qualia in a metrical context, as well, suggesting that the downbeat "sounds nice" because it is highly predictable.¹⁶ However, Huron does not extend his discussion of qualia to other localities in a metrical structure; I will pursue this line of reasoning here.

The qualia of metrical localities are often described in terms of physical metaphors such as strength, stability, and groundedness.¹⁷ In an attempt to capture the feelings of metrical qualia, I will extend this family of metaphors to the experience of crossing a river by hopping on rocks.¹⁸ In a straightforward scenario, we can cross from

¹⁴ Louis C. Charland, "Qualia," in *The Oxford Companion to Emotion and the Affective Sciences*, ed. David Sander and Klaus R. Scherer (Oxford: Oxford University Press, 2009), 327.

¹⁵ David Huron, *Sweet Anticipation: Music and the Psychology of Expectation* (Cambridge, Mass.: MIT Press, 2006), 144ff.

¹⁶ *Ibid.*, 184.

¹⁷ See the discussion of metaphor below, p. 62ff.

¹⁸ Victor Zuckerkandl represents meter as waves of motion. While this metaphor is apt, the rock skipping metaphor proposed here captures the sensation that strong beats support

one bank to the other by stepping on a single rock large enough to support one foot, midway between the banks:

River Bank 1 | • | River Bank 2

The river banks are the firmest ground here, but the medial rock nonetheless offers a stable enough place to put our foot as we move from one bank to the other. This example models a measure of 2/4 meter, where River Bank 1 is beat 1, the rock is beat 2, and River Bank 2 is the downbeat of the subsequent measure. Beat 2 is stable relative to smaller subdivisions (e.g. eighth notes), which lend little metrical support, but each measure's downbeat is more stable than beat 2.

We can expand this model to reflect triple meter: two rocks, each large enough for a single foot, provide enough firm ground to cross:

River Bank 1 | • • | River Bank 2

By maintaining momentum, we can put one foot on each small rock on the way to River Bank 2.

A model for 4/4 meter includes rocks of two different sizes, the larger of which has enough room for us to regain our balance on two feet midway through the river:

River Bank 1 | • ● • | River Bank 2

In this schema, the larger rock represents beat 3—relatively more stable than the smaller rocks of beats 2 and 4 yet less stable than the downbeats on either side of it. Thus, the sensation of traversing a measure of 4/4 evokes the feeling of passing from a strong moment—the downbeat of one measure—to an equally strong moment—the downbeat of

more weight than weaker ones, and that the spaces in between beats are inactive in meter formation. Victor Zuckerkandl, *Sound and Symbol: Music and the External World* (New York: Pantheon, 1956), 171. Reported in London, *Hearing in Time*, 80.

the subsequent measure. Along the way, points of relatively less stability lend support in varying degrees, with the strongest support occurring halfway across the river, on beat 3.

Although beats 2 and 4 are often considered to be equally weak, their qualia differ: beat 2 mediates a motion from strong 1 to less-strong 3, while beat 4 mediates a motion from less-strong 3 to the subsequent strong 1. In this way, beat 2 has a quale of decreasing energy reflecting the *departure* from the initial beat 1, while beat 4 has the quale of increasing energy as it *approaches* the subsequent beat 1.

Metrical Rhetoric. When first confronted with an acoustic signal, before being fully entrained, a listener must infer the operational meter; entrainment does not simply “kick in” at the first event of a piece. This process, which Justin London calls “*recognition*,” is not a simple matter of hearing a literal metrical grid as shown in the above dot notation, with complete auditory streams of coordinated, isochronous tones.¹⁹ Instead, listeners sort events in real time as a matter of course, translating the totality of the acoustic signal into the constituent hierarchical levels of an *idealized* metrical structure.²⁰ As Lerdahl and Jackendoff note, “moments of musical stress in the raw signal serve as ‘cues’ from which the listener attempts to extrapolate a regular pattern of metrical accents.”²¹

In analogy to metrical qualia, which characterize the feelings of particular localities in the domain of metrical behavior, what I call “metrical rhetoric” characterizes tones in the domain of the acoustic signal. *Metrical rhetoric* is the metrical meaning of

¹⁹ London, *Hearing in Time*, 67.

²⁰ Christopher Hasty, in *Meter as Rhythm*, offers a detailed perspective on the recognition process through his theory of “projection.” See Appendix 1 for a critical assessment of Hasty’s theory as it relates to jazz.

²¹ Lerdahl and Jackendoff, *Generative Theory*, 17.

tones in an acoustic signal, dependent on the listener's cultural knowledge, the localized musical context, and the tone's "acoustic gestalt." An *acoustic gestalt* is the conglomerate of a tone's constituent physical properties according to seven parameters: duration, attack style, release style, loudness, timbre, attack timing, and frequency. Thus metrical qualia is the feeling of a beat as experienced by a listener, the acoustic gestalt is the physical profile of a tone, and metrical rhetoric is the meaning of a tone as interpreted by a listener.

Musicians do not make ongoing, conscious decisions about the proper treatment of each individual parameter of the acoustic gestalt for each tone that they perform. Instead, they audiate the gestalt they hope to create and physically produce the tone based on that imagined gestalt. Successful coordination between the audiated gestalt and the physical production of the tone permits the proper mix of acoustic properties to create that gestalt; this is a matter of proficient instrumental or vocal technique.²² Likewise, listeners do not comprehend each parameter individually, instead perceiving the tone's gestalt. Communication of the acoustic gestalt depends on the performer's execution and the listener's experience in the style, and I would suggest that communication from proficient performers to experienced listeners is generally rather clear.

Metrical rhetoric depends significantly on cultural knowledge: the meanings of tones with similar acoustic gestalts might differ according to their idiomatic function in distinct styles. Expectations for the acoustic gestalt to match a metrical location's qualia may be a matter of *statistical learning*, "the idea that people learn from the statistical

²² The term "acoustic gestalt" is congruent with what musicians call "articulation," differing only in its invocation of the physical properties of sound.

frequencies of events in their environment.”²³ We learn which gestalts “go with” which qualia most often through experience with a style. For example, gestalts evoking strength—perhaps through heavy attack and sustained loudness, minimal timing discrepancy from the expected attack locality, and relatively long duration—would most often land on beats with relatively strong metrical accents. As Candace Brower notes, “there tends to be a high degree of reciprocity between phenomenal and metric accentuation, causing metrically accented events to sound ‘strong’ and unaccented ones ‘weak.’”²⁴

Of course, if beat qualia were always represented directly by analogous gestalts, the study of meter would be a simple matter of discovering patterns of gestalt types in acoustic signals. This is not the case. It seems that metrical recognition depends on a high enough frequency of coordination between acoustic gestalts and metrical qualia that listeners can recognize and entrain to a rhythmic structure. Further, certain elements may be weighed more heavily than others based on cultural understanding of a repertoire.

In mainstream jazz two aspects are particularly reliable as metrical cues. First, rhythm section instruments are traditionally responsible for metrical expression; experienced listeners attend to the ride cymbal, high hat, and bass for their role in meter. Second, because harmonic rhythm is regular and not typically syncopated, the localities

²³ David Temperley and Leigh VanHandel, “Introduction to the Special Issues on Corpus Methods,” *Music Perception: An Interdisciplinary Journal* 31, no. 1 (September, 2013): 1.

²⁴ Candace Brower, “Memory and the Perception of Rhythm,” *Music Theory Spectrum* 15, no. 1 (Spring, 1993): 27. “Phenomenal accent” is introduced and defined as “any event at the musical surface that gives emphasis or stress to a moment in the musical flow” by Lerdahl and Jackendoff, *Generative Theory*, 17.

at which harmonies change are reliable metrical cues regardless of the surface content being invented over them.

Metrical rhetoric is an important concept in the elucidation of jazz performance practice, and perhaps in the understanding of meter on the whole. It allows listeners, when presented with an acoustic signal, to understand metrical cues both prior to entrainment behavior and once already entrained, as reinforcement. It provides the sense of hierarchy typically provided by meter, even in contexts that discourage entrainment—pulseless rubato, inconsistently mixed meter, and polyrhythmic frameworks. Finally, metrical rhetoric allows ensembles to mark the boundaries of structural phrases, thereby making larger levels of rhythmic structure comprehensible. We will explore these ramifications as they arise below.

Groove

The conception of meter offered thus far draws heavily on Justin London's work, which crucially reconciles the distinct approaches to meter seen in cognitive science on the one hand and music theory on the other. Before discussing "groove," it will be useful to clarify a difference between London's work and this study in the application of the terms "rhythm" and "meter." London takes the parameter of *timing* (see p. 27) to be a component of meter, interpreting the infinite differentiability of surface rhythms as an indication of an infinite differentiability of meters—his "many meters hypothesis."²⁵ In my view, however, the absolute temporal arrangement of acoustic stimuli is an issue of rhythm, not meter.

²⁵ London, *Hearing in Time*, 182ff.

London is correct to emphasize timing as a central and indispensable input into metrical experience; attack timing feeds into a tone's acoustic gestalt, which itself imbues the tone with metrical meaning. I am sympathetic to London's many meters hypothesis, which posits that "a listener's metric competence resides in her or his knowledge of a very large number of context-specific metrical timing patterns" (182). However, I consider these timing patterns to be rhythmic: contrasts in *metrical structure* lead to categorical differences between meters—what London calls "metrical types" (94ff.)—and each distinct meter creates space for limitless variation in expressive timing.

Timing as an issue of rhythm accounts for the IOIs observed in real performances, which constantly fluctuate without any disruption to metrical continuity. London seems to assert that each piece has a particular timing pattern.²⁶ In humanly performed music, however, no single, stable pattern of timings is retained for the duration of a piece. Instead, performers vary their timings according to ever-changing surface content and the interactive needs of ensemble situations, a principle demonstrated through the ongoing variation in IOI between successive tones in jazz solos.²⁷ According to London's view that different timings produce different meters, a typical performance would have a different meter at each new measure; such variation contradicts the basic notion of meter as periodic and invariant.²⁸

While distinctions in timing alone do not constitute distinctions in metrical categories, intricacies of timing that bring a unique motional life to a particular passage

²⁶ "...the particular timing pattern involved in that piece." London, *Hearing in Time*, 183.

²⁷ For a sense of this "constant fluctuation," see the IOI data in the musical examples in Butterfield, "Why do Jazz Musicians Swing Their Eighth Notes?"; Fernando Benadon, "Slicing the Beat: Jazz Eighth-Notes as Expressive Microrhythm," *Ethnomusicology* 50, no. 1 (2006); or any number of similar studies addressing timing.

²⁸ London, *Hearing In Time*, 9ff.

are congruent with what musicians of African diasporic styles call “groove.” A *groove* is the feeling of a passage, as influenced by its rhythmic structure and the acoustic gestalts of its constituent tones. The experience of hearing and partaking in a groove is an instance of entrainment. While the number of well-formed metrical types is finite, grooves are infinitely differentiable. There are *many* grooves in the single meter of 3/4, for example, and in fact there may be many grooves in the performance of a single 3/4 piece.

All groove is meter, but not all meter is groove. Groove has dimensions that are not associated with Western classical music, for example, because of differences in aesthetic values within the respective traditions. Classical performance practice favors ensemble-wide uniformity of timing, whereas performances of African diasporic music feature opposition of timing between the constituent musical parts. Groove is a central criteria in the aesthetic judgment of African diasporic music, which, according to Charles Keil, stands in contrast to the centrality of syntax in the aesthetic judgment of Western classical music.²⁹

This opposition of timing occurs in numerous ways, and two in particular are worth exploring here. In what Paul Berliner has called *rhythmic counterpoint*, each individual rhythmic stream in a texture may be understood as a voice (in the sense of “voice-leading”), free to enter and exit the acoustic signal at the performer’s discretion.³⁰ As a musician plays a certain rhythm, that rhythm’s character—particularly its structure,

²⁹ See Charles Keil, “Motion and Feeling Through Music,” *The Journal of Aesthetics and Art Criticism* 24, no. 3 (Spring, 1966): 337–349.

³⁰ See, for example, Berliner’s *Thinking in Jazz*, 318.

orientation toward the meter, and role in the larger context—guides the timing of its tones.

It is common for the same beat within the metrical structure to accommodate more than one timing in different rhythmic streams; for example, the snare drum on beat 4 might land *on top of the beat*, or earlier than what is expected according to the idealized metrical structure. On the same beat 4, a piano chord might land *behind the beat*, or later than expected. This incongruence between different voices on the same beat leads to what is referred to as “thickness” of the beat, or “depth” of the groove. Every voice in a rhythmic counterpoint contributes to groove, playing against both the idealized rhythmic structure and the timings of the other realized voices in ways that both vitalize the beat and clarify the meter.

In a second example of opposition in timing as a characteristic of groove, Keil discusses the interaction between drummers and bassists. He suggests that each rhythm section musician has her own innate preference for the typical placement of the tones in an ongoing quarter-note bassline or ride cymbal tap. Keil further notes that bandleaders tend to hire drummers and bassists with contrasting styles, such that one musician usually plays on top of the beat and the other tends to play behind it. The resulting staggering of timings lends the music an ongoing sense of thickness characteristic of the swing groove. Pairings of two on-top players or two behind players are rare, possibly because they do not achieve the desired thickness of beat.³¹

Keil’s article frames an important issue, but it is important to note that timing tendencies vary not only by the musician but also by matters of musical context; tempo is

³¹ Ibid., 341ff.

particularly impactful. Musicians listen carefully to the acoustic signal and react to it, adjusting their tone timings on a moment-to-moment basis according to the performance's needs.

In its usages and connotations, the term groove is, in some senses, better equipped than meter to accommodate a behavior-oriented approach. Apart from specialized discussions, meter's common meaning among musicians refers to its notation, as in the notated marking at the beginning of a piece, or the organization of beats, apart from human behavior. Even in behavioral approaches, meter has no verb form: a person doesn't "meter" but does "groove."

The term, "groove," applies at three levels of generality. At its most general, it evokes the timing patterns of styles characteristic of a performance tradition such as swing, funk, or samba. Each of these styles involves a complex interaction of timing tendencies that require deep cultural knowledge in order to replicate. At a medial level of generality, an individual funk song may be understood to have a particular groove, which continues for its entirety, distinct from the grooves on other tracks on the same album. And at its most specific, groove (without an article, "the groove" or "a groove") is a property that music may attain as we experience it in time: the ebbing and flowing interaction of acoustic gestalts as tones emerge.

Polyrhythmic Frameworks as Syncopation

Syncopation is a recognized element in the Western classical tradition as established in sources as early as sixteenth century counterpoint treatises.³² Where meter

³² See, for example, Gioseffo Zarlino, *The Art of Counterpoint: Part 3 of Le Institutione harmoniche* (1558) trans. Grey Marco and Claude Palisca (New Haven: Yale University Press, 1968), 97.

allows a listener to anticipate a particular moment as hierarchically important, syncopation occurs when a performer emphasizes a metrically weaker moment *in favor* of that anticipated moment. *Syncopation*, then, is the offsetting of a tone with a strong acoustic gestalt from a locality with strong metrical qualia. Writers have often described jazz as a highly syncopated music, an assessment inadequate to capture the peculiar nature of jazz rhythm; “highly syncopated” could apply equally well to many of Monteverdi’s madrigals or Schumann’s piano works.³³ The organization of syncopation in jazz should be characterized far more precisely.

Textures in jazz normatively feature what I call *polyrhythmic frameworks* (PFs), additively organized streams of tones with strong acoustic gestalts that mix durations related by ratios of 2:3—quarter notes mixed with dotted quarter notes, half notes mixed with dotted half notes, or eighth notes mixed with dotted eighth notes. Culturally, these frameworks originate most directly from the second line march beats of New Orleans.³⁴ The constituent tones of PFs regularly shift between metrical localities of various qualia, and PFs readily cross barlines. Because PFs are the basis of jazz syncopation, even an isolated attack that stands out within a texture (for example a single tone, or even a single percussion articulation) may be heard as a momentary glimpse at a PF. The rhythmic

³³ The opening paragraph of the *New Grove* entry on jazz lists three related meanings, the third of which begins, “a style characterized by syncopation.” Mark Tucker and Travis A. Jackson, “Jazz,” *Grove Music Online*. *Oxford Music Online*. Oxford University Press, accessed October 26, 2014, <http://www.oxfordmusiconline.com.ezproxy.uky.edu/subscriber/article/grove/music/45011>.

³⁴ Hal Galper emphasized the importance of second line march beats in my graduate jazz piano lessons. See Benjamin Doleac, “Strictly Second Line: Funk, Jazz, and the New Orleans Beat,” *Ethnomusicology Review* 18 (2013), accessed October 25, 2014, <http://ethnomusicologyreview.ucla.edu/journal/volume/18/piece/699>.

parameter of the audiation stream involves the generation of PFs (see Chapter 1, p. 6ff.).³⁵

As multiple musicians simultaneously generate PFs through their individual audiation streams, they need not invent the same PFs at the same time. As a result, the composite of the various rhythms in an improvised texture contributes to the ongoing rhythmic counterpoint in the acoustic signal (see pp. 39–40). At times, no PF will be present, as when the prototypical pairing of walking bass and drums underpins moments between a soloist’s melodic phrases. Conversely, a texture may be saturated with PFs: it is normative for three distinct PFs to be realized simultaneously in snare drum comping, piano comping, and saxophone solo. The presence of multiple, simultaneous PFs makes for a rich texture without timbral muddiness and does not interfere with metrical entrainment.³⁶ For example, on Sonny Rollins’s “Tenor Madness,” listen to the interaction between the snare drum, piano, and saxophone during John Coltrane’s solo at 0:16, directly after the melodic statement.³⁷

PFs typically do not engender full-fledged entrainment because they are discontinuous and inconsistent, but the metrical rhetoric of their members is nonetheless hierarchically meaningful. Experienced listeners recognize the acoustic gestalts of a PF’s members as being hierarchically important. In other words, membership in a PF *grants* structural importance to a tone.

³⁵ Galper emphasized in my lessons the continual generation of “jazz rhythms” or “second line rhythms.” This drastically contradicts the typical jazz pedagogical emphasis on “locking in” to the quarter-note pulse. This section attempts to rigorously characterize this process.

³⁶ See Hal Galper, “Hal Galper Master Class – Rhythm and Syncopation,” *YouTube*, accessed March 2, 2015, <https://www.youtube.com/watch?v=a2XnB5G6oSc>.

³⁷ Sonny Rollins, “Tenor Madness,” on *Tenor Madness*, Recorded 1956, Prestige LP 7047.

For example, the “Charleston rhythm,” 1+2+, places a tone with a strong acoustic gestalt on the “and” of 2 with no subsequent tone on the downbeat of 3.³⁸ The tone’s strong metrical rhetoric conflicts with the *weak* qualia of its upbeat metrical locality. The subsequent downbeat of beat 3 has strong metrical qualia, but it lacks surface reinforcement—this offsetting of a phenomenal accent from a metrical accent characterizes this study’s notion of syncopation. Experienced listeners comprehend this “and” of 2 as being hierarchically important based on its acoustic gestalt, but this importance does not preclude beat 3 from being metrically accented through entrainment. Both localities are accented, but in different ways.

Unaccented tones, known as “ghost notes,” are often subsumed between accented PF members. In that way, listeners can understand hierarchy in rhythms organized by PFs apart from the operatively entrained meter. Experienced listeners rely on cultural familiarity with the makeup of conventional jazz rhythms: they comprehend hierarchical importance by virtue of recognizable patterns of acoustic gestalts apart from entrainment.

Although PFs provide a layer of metrical meaning distinct from entrainment, they nonetheless interact with entrained meter in predictable ways, requiring special mention of two reductive operations central to jazz analysis. First, the Schenkerian “displacement” is ubiquitous in jazz, with some particularistic nuances.³⁹ In a *displacement*, each syncopated eighth note in a PF is reducible to a non-syncopated hearing through

³⁸ The “Charleston rhythm” is a common rhythmic pattern, named for its role in James P. Johnson’s “The Charleston” (1923). In this and the following representations of rhythm through beat counts, attacks are bold and underlined.

³⁹ For the Schenkerian notion of displacement, see Allen Cadwallader and David Gagné, *Analysis of Tonal Music: A Schenkerian Approach*, 3rd edition (New York: Oxford University Press, 2011), 197.

association with a strong metrical locality, according to the following fixed correspondences:



In a 4/4 measure subdivided into eighth notes, each of the four upbeats is adjacent to a relatively strong beat—1 or 3—and is understood in relation to that beat. The “and” of 1 is understood in relation to what *precedes* it while the “and” of 2 is understood in relation to what *succeeds* it. Neither of these upbeats is understood in terms of beat 2 because each is closer to a stronger beat, respectively 1 and 3.⁴⁰

This principle is not only analytical—as a tenet of performance practice, the “and” of 1 *reacts* to beat 1, whereas the “and” of 2 *anticipates* beat 3.⁴¹ Reactions and anticipations demand differing acoustic gestalts in performance, and in turn, the sense of metrical rhetoric suggested by those gestalts helps to clarify the entrained meter. In this respect, timing—as one of the seven parameters of a tone’s acoustic gestalt—is crucially important: a tone’s placement on top of or behind the beat has significant communicative power, and that placement is effected by the gravity of strong beats. *PFs have their own hierarchical structure apart from entrained meter, but they nonetheless have clear metrical meaning: their placement within the measure is typically unambiguous.*

A second operation important to reductive analysis of jazz is the “connection.” A *connection*, defined in terms of the way it elaborates the deeper structural level of a PF, is

⁴⁰ Stefan Love comes to a different conclusion, viewing “syncopated left-hand attacks as belonging on the subsequent quarter note.” “Subliminal Dissonance or ‘Consonance’? Two Views of Jazz Meter,” *Music Theory Spectrum* 35, no. 1 (Spring, 2013): 52.

⁴¹ Miles Osland, “Jazz Speed Reading: A Method for Feeling Rhythms at Fast Tempo,” *Jazz Educators Journal* 31, no. 5 (March, 1999): 42–43.

a phenomenally unaccented tone that connects two members of a PF. The PF of $\underline{1}+\underline{2}+3\pm$ leaves space for intermittent eighth notes—one extra eighth note may fit between beats 1 and 2, and two eighth notes may intercede between beats 2 and the “and” of 3. In these cases, the intermittent, unaccented tones may be reduced out at a deeper structural level as connections.

Figure 2.3 shows musical notation for measures 9–10 of Sonny Rollins's "Tenor Madness". The notation is presented in four staves, labeled (a) through (d). Above the staves, the chords Cm, Cm#7, Cm7, and F7 are indicated. Staff (d) shows the harmonic structure with chords Cm, Cm#7, Cm7, and F7. Staves (a), (b), and (c) show different melodic interpretations of the same measures. Staff (a) is divided into three segments: Segment 1 (measures 9–10), Segment 2 (measures 11–12), and Segment 3 (measures 13–14).

Figure 2.3 “Tenor Madness,” Sonny Rollins, mm. 9–10
This notation is produced with permission from Bicycle Music Group.

Figure 2.3a (above), mm. 9–10 of Sonny Rollins’s “Tenor Madness” (1956), exemplifies a melody whose accents manifest PFs. The passage begins with $4\pm 1\pm$, labeled “Segment 1,” and ends with a gesture whose bounding notes form $\underline{1}+\underline{2}\pm$, the “Charleston” rhythm, labeled “Segment 3.” Entrained meter (as opposed to a PF) guides

the rhythmic motion of a stream of eighth notes labeled “Segment 2,” including an eighth-note anacrusis on the “and” of 2. Thus the rhythmic organization of the line begins with a PF in Segment 1, continues with non-syncopated rhythm in Segment 2, and then returns to a PF in Segment 3.

Figure 2.3b is a hierarchical reading of the melodic line in 2.5a. This level retains both members of the PFs in segments 1 and 3, reducing Segment 3 through the “connection” operation.⁴² The B \sharp in Segment 2 is metrically strong and functions as a chromatic passing tone within a stepwise progression, C–B \sharp –B \flat –A, which organizes the passage. The “and” of 2 in m. 9, C, could have been reduced out at level b as an anacrusis to a strong beat, but its retention connects the passage’s initial C to the B \sharp , lending cohesion to this level of the reduction. Try singing in time the melody in level b: it is musically well-formed, and easier to sing than the surface in level a, which relies on instrumental idioms. Conversely, these instrumental idioms are elaborations of a more basic melodic-harmonic skeleton.

Even though it occurs on an upbeat, the A that concludes this melodic line is the crux of its pitch organization in two senses. First, the middleground chromatic stepwise progression arrives at this A. Second, the A anticipates the only harmonic change in the line, the progression from Cm7 to F7. The F7 conceptually begins on beat 3, but jazz practice dictates that anticipations of harmonic changes, in which there is no attack on the

⁴² Other parameters such as melodic contour and membership in a step progression reinforce the hierarchical importance of these PF members.

downbeat within the same voice as the anticipation, are understood to represent the upcoming harmony.⁴³

This rule is an instance of the more general displacement operation. The “and” of 2 in m. 10 belongs to an F7 harmony even though that harmony does not begin until beat 3 in the scheme. Thus, despite its weak metrical position, the A attains hierarchical support through membership in a PF because it anticipates a harmonic change and no subsequent attack defines that change at the metrical strong point. In contrast, the anacrusis to segment 2 is hierarchically unimportant because it is followed by a hierarchically important pitch in the same voice.

Figure 2.3c reduces out the anacrustic C, as a repetition, and the G, as a motion into an inner voice. What remains is purely a chromatic stepwise linear progression reflecting the chord symbols above the example, Cm–Cm#7–Cm7–F7; Steven Strunk refers to this chromatic decoration of the minor seventh chord as a “passing tone line operation.”⁴⁴ The rhythm of Figure 2.3c unites two PFs: a single-note PF, followed by a familiar three-note comping rhythm.⁴⁵ The famous “Basie Ending” follows this rhythm, and the bassline of the “Ellington Ending” is reducible to this rhythm through the same process as the present analysis of “Tenor Madness.”

⁴³ Gary Lindsay, *Jazz Arranging Techniques: From Quartet to Big Band* (Miami: Staff Art, 2005), 10.

⁴⁴ While each half note may be symbolized with a different chord in describing its vertical construction, this four-chord progression is an elaboration of the two-chord progression, Cm7–F7. Steven Strunk, “The Harmony of Early Bop,” *Journal of Jazz Studies* 6, no. 1 (1979): 11. Jerry Coker refers to the same device as a “contrapuntal elaboration of static harmony” (CESH). See Coker, *Jazz Keyboard for Pianists and Non-Pianists: Class or Individual Study* (Belwin Mills, 1991), 41.

⁴⁵ See p. 42 regarding single tones that may serve as a PF.

Jazz musicians embellish PFs by adding intermittent diminutions, and they also reduce PFs hierarchically, finding the rhythmic core of fully embellished lines. In the original Sonny Rollins recording of “Tenor Madness,” the rhythm section (most prominently, drummer Philly Joe Jones) reinforces the rhythmic essence of the melody by emphasizing precisely the rhythm notated in Figure 2.3c. This was surely not notated separately for Jones; instead, he understands the reduction process musically and applies it in performance as a matter of course. As a result, he rhetorically accents *only* the pitches that express what Strunk calls the “essential line,” C–B \sharp –B \flat –A.⁴⁶

The reduction of two displacements in Figure 2.3c results in the rhythm shown in Figure 2.3d: at this abstract level, the chromatic step progression is represented as a series of downbeat half notes: as shown by the horizontal lines, the “and” of 4 anticipates beat 1, and the “and” of 2 anticipates beat 3. The local chord progression outlined by this line, an elaboration of Cm7–F7, is likewise understood as proceeding in half notes in accordance with the scheme’s harmonic rhythm.⁴⁷

This analysis reflects the two-way relationship between elaboration and reduction as it plays out in listening to and performing mainstream jazz. Improvisers and composers elaborate half notes, as they occur in the scheme, into syncopated PFs; listeners reduce PFs into metrical comprehension in real time with the aid of the rhythm section. In their capacity as listeners, performers rely on this type of understanding in interpreting how the syncopated inventions of other ensemble members corresponds to the audiated stream. While ambiguities may exist as in any music, this process is on the whole unambiguous.

⁴⁶ Strunk, “Harmony of Early Bebop,” 11.

⁴⁷ The local half-note harmonic rhythm can be reduced even further to a Cm7–F7 progression according to the protocol proposed in Strunk, “The Harmony of Early Bebop.”

An exploration of possible metrical positions for attacks separated by time-spans of two or three eighth notes will generate examples of PFs that form a basic rhythmic vocabulary for jazz musicians. I will use “beat class theory,” as proposed by Richard Cohn, to model PF attacks as they correspond with meter. Cohn writes, “A metric cycle consists of n beat-classes, arranged into a mod- n system and labelled from 0 to $n - 1$, with 0 representing the notated downbeat.”⁴⁸ Because eighth notes often function as the constant pulse that is grouped into PFs, the following examples will present PFs in terms of a mod-8 system, $n = 8$, modelling the eighth notes of a 4/4 measure, as indicated in Table 2.1. It is worth noting, however, that PFs may also retain the sixteenth note, eighth-note triplet, or quarter note as their constant pulse.

Table 2.1 Beat-class integers

| Beat-Class Integer | Conventional Beat Name |
|--------------------|------------------------|
| 0 | 1 |
| 1 | and of 1 |
| 2 | 2 |
| 3 | and of 2 |
| 4 | 3 |
| 5 | and of 3 |
| 6 | 4 |
| 7 | and of 4 |

Beat class (02) represents two attacks separated by the span of two eighth notes. Set [0,2] and its transpositions by even index values—[2,4], [4,6], and [6,0]—fall on the beat, simply reinforcing the pulse. Whereas these figure into polyrhythmic frameworks, they are not syncopated. Odd-indexed transpositions of [0,2], however, generate upbeats

⁴⁸ Richard Cohn, “Transpositional Combination of Beat-Class Sets,” *Perspectives of New Music* 30, no. 2 (1992): 149.

of successive beats; for example, $T_1[0,2]=[1,3]$, $1\pm 2\pm$, a common jazz syncopation. Beat class (03), in its eight transpositions, is also fundamental to jazz language. In each transposition, one of its two attacks will necessarily land on the upbeat and the other on the downbeat.

Jazz compositions often repeat a particular beat class set as an essential rhythmic motive, a manifestation of the proclivity for jazz musicians to use similar content in composition and improvisation. Table 2.2 presents examples of transpositions of (03) that are repeated motivically within well-known compositions. In John Coltrane’s “Moment’s Notice,” [1,4] organizes rhythm section hits; in Miles Davis’s “So What,” [4,7] organizes the melody; and in the remaining examples, PFs guide rhythmic unison figures in the melody that are supported by rhythm section hits. These examples are meant to be illustrative rather than exhaustive, as polyrhythmic frameworks are ubiquitous throughout the jazz tradition.

Table 2.2 Polyrhythmic frameworks in notable compositions

| Beat Class Set | Title | Composer | Location in Form |
|------------------------|-------------------|------------------|------------------|
| [0,3] (1 +2+) | “The Charleston” | James P. Johnson | Throughout |
| [1,4] (1+2+ 3) | “Moment’s Notice” | John Coltrane | m. 31 |
| [2,5] (2 +3+) | “The Sidewinder” | Lee Morgan | Beginning |
| [4,7] (3 +4+) | “So What” | Miles Davis | Throughout |
| [5,0] (3+4+ 1) | “Black Nile” | Wayne Shorter | Bridge |

Hypermeter

Certain metrical structures encourage entrainment—those involving (1) coordinated pulses at different levels of structure and (2) the periodic patterning of multiple categories of beats, differentiated by their qualia (see p. 32ff.). In this section I extend these principles to metrical patterns at higher structural levels in what is known as

“hypermeter.” *Hypermeter* suggests that the principles governing meter at the tactus level occur analogously at slower pulse levels, creating higher levels of a metrical structure. Therefore, a particular locality within a metrical structure may function both as beat 1 at a low level and as beat 3 at a higher level, for example, and well-formed patterns of dot structures may describe multiple structural levels.

Figure 2.4 replicates the dot structure introduced earlier in Figure 2.1, indicating three levels of pulse at time intervals related by a 4:2:1 ratio. In our previous discussion, this structure reflected an interaction between quarter notes, half notes, and whole notes. The principle of hypermeter suggests that the same structure can reflect longer spans—say, an interaction between spans of one, two, and four measures. In this way, pulses at the level of the measure—the whole note in 4/4—may themselves cycle through beats, as can pulses at the two-bar level, and so on.

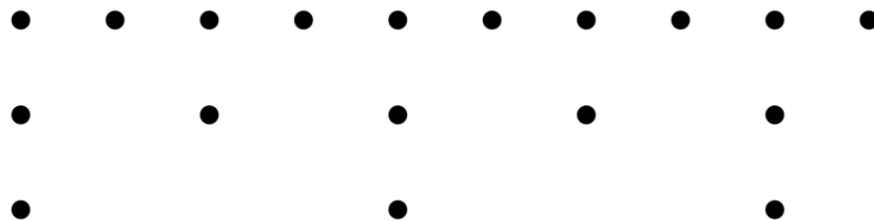


Figure 2.4 Three layers of duple metrical structure

Lerdahl and Jackendoff posit that meter is what they call “recursive”:

Elements of metrical structure are essentially the same whether at the level of the smallest note value or at a hypermeasure level. Thus the pattern in 7.7a [my 2.6] not only expresses 4/4 meter, but could apply equally to a sequence of 16th notes or a sequence of downbeats of successive measures.⁴⁹

⁴⁹ Lerdahl and Jackendoff, *Generative Theory*, 20.

Yet recursion is not universal to all structural levels within their theory: at levels below the tactus, Lerdahl and Jackendoff admit flexibility, noting that the tactus may be subdivided variously—in eighth notes, eighth-note triplets, or sixteenth notes, for example—with relative freedom.⁵⁰

At the other end of metrical experience, they note that metrical perception progressively fades and ultimately disappears at deeper levels of structure: “At large levels the patterns of phenomenal accentuation tend to become less distinctive, blurring any potentially extrapolated metrical pattern. . . . Hence the listener’s ability to hear global metrical distinctions tapers and finally dies out.”⁵¹ They suggest that “Typically there are at least five or six metrical levels in a piece. The notated meter is usually a metrical level intermediate between the smallest and largest levels applicable to the piece.”⁵²

In resonance with Lerdahl and Jackendoff, music psychology research suggests cognitive constraints on the upper limit of metrically relevant spans, making problematic the extension of metrical principles to deep structural levels. I could set an alarm to go off once every hour and another to sound once every two hours, synchronized with every other ring of the first alarm. This scenario is metrical in that it satisfies the requirements of coordination and periodicity, but such events in a musical context would be too distant for us to develop a specific expectation because they would be unrelated in our perceptual experience.

⁵⁰ Ibid., 72.

⁵¹ Lerdahl and Jackendoff, *Generative Theory*, 21.

⁵² Ibid.

This begs the question: what *is* the longest span over which a listener will perceive metrical organization in music? According to Justin London, the maximum length of a perceptible measure is 5 seconds,⁵³ reflecting the limits of the “psychological present”—“the time interval in which sensory information and concurrent behavior are to be integrated within the same span of attention.”⁵⁴ Yet London’s contention that metrical behavior is constrained to 5-second timespans conflicts with numerous accounts of jazz performance practice that imply or assert the perception of the eight-bar level of hypermeter: pulses at this level are greater than 5 seconds at all but the fastest tempos.

Music theorists including Henry Martin, Stefan Love, and Keith Waters posit the formation of hypermeter at the eight-bar level and sometimes as high as the thirty-two-bar level.⁵⁵ While Barry Kernfeld and Paul Berliner use the common (yet vague) terminology of phrase length rather than hypermeter, both assume this phenomenon so fundamentally that they note exceptions to the norm without having asserted it explicitly.⁵⁶ Because hypermeter at spans greater than five seconds plays a ubiquitous

⁵³ In his initial explanation of this constraint, London takes the upper limit to be a range, 5–7 seconds (*Hearing In Time*, 30). When he defines his well-formedness constraints, however, he cites an upper limit of 5 seconds (*Hearing In Time*, 92).

⁵⁴ J. A. Michon, “The Making of the Present: A Tutorial Review” in *Attention and Performance VII*, ed. J. Requin, 90–111 (Hillsdale, N.J.: Erlbaum, 1978). Reported in London, *Hearing in Time*, 30.

⁵⁵ Keith Waters, *The Studio Recordings of the Miles Davis Quintet, 1965–68*, (New York: Oxford University Press, 2011), 69–70; Henry Martin, “Expanding Jazz Tonality,” *Theory and Practice* 37/38 (2012–2013): 199–200.; Stefan Love, “Subliminal Dissonance,” 51.

⁵⁶ Kernfeld, in *What to Listen For in Jazz*, describes a passage with twelve-measure phrases: “This treatment is unusual—one cannot overemphasize the importance of symmetrical phrase lengths in nonblues structures in jazz.” Barry Kernfeld, *What to Listen For in Jazz* (New Haven: Yale University Press, 1995), 63. In two unrelated passages within *Thinking in Jazz*, Berliner cites descriptions by Wynton Marsalis (224) and Rufus Reid (91) of challenges in performing non-normative phrase groupings.

and visceral role in the activities of listening to and performing jazz, it is pertinent to account for the discrepancy between the empirical research and musical experience.

A Non-Recursive Model of Hypermetrical Perception

Following Stefan Love, I would suggest that characteristics particular to jazz performance practice provide strategies for hearing hypermeter at spans of time greater than London's constraints. As Love speculates:

One perceives the regularity of such time-spans through the learned skill of unconscious accumulation of smaller spans. . . . An eight-measure downbeat receives its metrical accent not by projection from the previous eight-measure downbeat but from the accumulation of lower-level beats and foreknowledge of the scheme."⁵⁷

Rather than basing attentional choices on the hierarchical sorting of every detail as it passes in time, a listener allows metrically important events to accumulate, creating expectations for strong hypermetrical downbeats at intervals defined by metrical accents at a lower level.

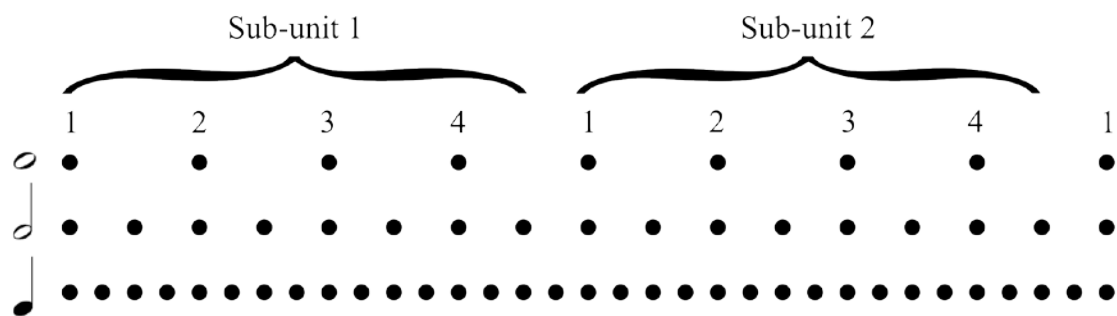


Figure 2.5 The non-recursive eight-bar hypermeasure

⁵⁷ Stefan Love, "Subliminal Dissonance": 51. Also see Keith Waters, "Blurring The Barline: Metric Displacement in the Piano Solos of Herbie Hancock," *Annual Review of Jazz Studies* 8 (1996): 22–24.

I propose that this “accumulation” occurs non-recursively, through three different processes at different structural levels. Figure 2.5 (above) diagrams this model of the eight-bar hypermeasure in 4/4, using a different mode of visual representation for each process. First, dot notation represents levels of meter low enough for entrainment, from the tactus to the measure.⁵⁸ Arabic numerals above the dot notation represent a second process based on the feeling of cycling through metrical qualia at the measure level. A third process reflects the expectation to pair units at the four-bar level into an eight-bar level, notated with downward facing brackets.

The dot notation in Figure 2.5 represents structural levels available for entrainment according to London’s strict constraints. At the slowest perceptible tempo according to London’s figures, the tactus is 50 bpm. Therefore, the longest possible span from one measure’s downbeat to the next measure’s downbeat in quadruple time (such as 4/4) is 4.8 seconds, satisfying London’s upper constraint for an integrated metrical span. In fact, a 4/4 measure may be as slow as 48 bpm—too slow for entrainment, according to London—and nonetheless satisfy the 5-second constraint for the measure. The strictest view, then, admits that downbeats of successive 4/4 measures may be perceived through entrainment: even at the slowest perceptible tempo, the 4/4 measure is a perceptually meaningful unit.

The slowest level of dot notation in Figure 2.5 (labeled with a whole note) represents a pulse at the measure level. We comprehend beats at this level according to metrical qualia analogous to qualia at the tactus level (see p. 32ff.), labeled here with

⁵⁸ Entrainment may occur at levels higher than the measure, especially at faster tempos. The presence of entrainment does not, however, preclude the expectation-based processes outlined below from shaping our comprehension of higher-level meter.

Arabic numerals. Each beat at the tactus level has associated qualia, and cultural knowledge of jazz instructs us to transfer our understanding of these associations to the pulse at the measure level.

Because measures tend to group into fours in mainstream jazz, the measure level of hypermeter is normatively analogous to a 4/4 measure at the tactus level. Passages in which the measure level of hypermeter manifests 2/4, 3/4, or 5/4 measures deviate from our expectations; in other words, because experienced listeners have a strong expectation for what are conventionally called “four-bar phrases,” two-, three-, and five-bar phrases counter that expectation. By cycling through qualia, the measure level accumulates into this basic, four-bar hypermetrical *sub-unit*.

The stepping stone analogy developed above (p. 32ff.) pertains not only to the feeling of traversing a measure, but also to the feeling of traversing a sub-unit. At the measure level, beat 3 stabilizes the span from the first to the fifth beat. The span from stronger beat 1 to less-strong beat 3 is likewise stabilized by beat 2, with a sense of decreasing attentional energy, just as beat 4 connects less-strong beat 3 to the subsequent, stronger beat 1 with a sense of increasing attentional energy.

I posit that the experience of cycling through these qualia at the measure level may involve a process distinct from entrainment behavior. The expectations engendered through this “qualia cycle” do not influence specific expectations for each beat’s locality, as ongoing entrainment at lower levels is sufficient to guide precise locality-based expectations. Differentiations in qualia at this level do, however, generate a hierarchy of accentual weight. I hope to emphasize that these qualia are visceral sensations

experienced in listening to an acoustic signal, not the products of the intellectual act of counting.⁵⁹

At yet a higher level of hypermeter, four-bar sub-units pair into eight-bar hypermeasures as a matter of stylistic expectation. In Figure 2.5, brackets with the labels “sub-unit 1” and “sub-unit 2” indicate this grouping of four-bar hypermeasures at a higher level. As listeners traverse a hypermeasure, we maintain a sense of locality within that hypermeasure. Beat 2 of sub-unit 2 feels different from beat 2 of sub-unit 1 by nature of the listener’s awareness of being in the second sub-unit. Likewise, the metrical accent on beat 1 of sub-unit 2 is weaker than the metrical accent of the same metrical locality in sub-unit 1 because we understand it as part of an ongoing hypermetrical unit rather than a new beginning.

As a central premise of this study, I posit that *the eight-bar level of hypermeter is particularly important to jazz performance practice, constantly mediating attention as we experience music in real time*. For that reason, I take regularity of hypermeter at the eight-bar level to be paradigmatic and, most likely, statistically normative in many jazz styles. Eight-bar hypermeasures are ubiquitous in ragtime, Tin Pan Alley tunes, Broadway tunes, and American popular ballads. This norm is adopted in bebop and hard bop compositions, which operate in dialogue with earlier forms. It figures prominently in the fusion sub-tradition, and it often emerges in free jazz and postbop, even if as a foil (see Chapter 1, p. 3ff.).⁶⁰

⁵⁹ Love criticizes the idea that musicians count actively in performance. Love, “Subliminal,” 51n13.

⁶⁰ I view twelve-bar blues forms as a distinct genre with its own norms—namely, ternary organization of four-measure subphrases. Four- and sixteen-bar units are also important in jazz, but I privilege the eight-bar level as a central mediator of attention.

Because the eight-bar hypermeasure is central to this study, I name its constituent measures with a numbering system of what I will call *functional measure* labels. In sub-unit 1, each metrical downbeat retains the label of its beat, 1–4. However, in the second sub-unit, functional measure numbers continue sequentially with 5–8. By numbering each of the eight measures, as in “12345678,” I assign a distinct name to each measure-level locality in an eight-bar hypermeasure. These names are fixed within the analytical system, each consistently retaining a particular meaning. For example, functional m. 1 is always the beginning of a new hypermeasure and functional m. 5 is always the downbeat of sub-unit 2.⁶¹ In the absence of contradictory evidence, experienced listeners assume that functional measures will emerge in a consistent cycle, in what I call the *functional measure cycle*.

A summary of my view of hypermeter will be useful here. I reconcile the incongruity between established cognitive constraints on entrainment behavior and experiential knowledge of jazz by proposing a non-recursive model of hypermeter, in which listeners apprehend various structural levels through differing means. At low levels, a listener *entrains* to the acoustic signal. The listener extends entrained meter to the four-bar sub-unit in analogy to the metrical *qualia* of the tactus level. And through cultural knowledge of the norm for sub-units to be paired at a higher structural level and an ongoing awareness of locality within the hypermeasure, the listener perceives eight-bar hypermeasures. This eight-bar norm is numerically schematized as 12345678, where

⁶¹ For groupings of three subphrases such as the twelve-bar blues, the third subphrase uses the characters abcd, such as 12345678abcd. In this case, “d” has beat 4 *qualia* as the last beat in the third subphrase.

5–8 have qualia corresponding to beats 1–4 but are distinguished by their locality in sub-unit 2. Experienced listeners assume a continuous *functional measure cycle*.

Two Types of Phrase: Structural and Melodic

Terminology. In European common-practice music, a piece's form is fixed through the notation of specific content. In contrast, in improvised passages in mainstream jazz, form exists most essentially as conceptual models (see Chapter 1, p. 6ff.). In the most normative contexts, eight-bar hypermeasures serve as units within the scheme. This hypermetrical regularity assists musicians as they track the progress of form, keeping their place despite the surface complexity of numerous voices in rhythmic counterpoint (pp. 39–40), any of which may challenge meter though polyrhythmic frameworks (p. 41ff.). In such normative contexts, the mentally constructed formal unit is congruent with the hypermeter.

However, many formal units deviate from the norm for eight-bar hypermeasures. Figure 2.6 represents such a case, in which the second formal unit in the refrain of Ted Koehler and Harold Arlen's "Stormy Weather" (1933) is ten measures in duration.⁶² Therefore, this unit disturbs the expected hypermetrical regularity above the two-bar level: consistent periodicity at the four- and eight-bar levels would require a strong hypermetrical downbeat at the ninth measure. Nonetheless, performances of this tune require that the ensemble share in their conceptual models this ten-measure formal unit.

⁶² "Stormy Weather (Keeps Rainin' All The Time)," in *The Harold Arlen Songbook*, Ed. David Bickman, 48–51 (Milwaukee: Hal Leonard, 1985).

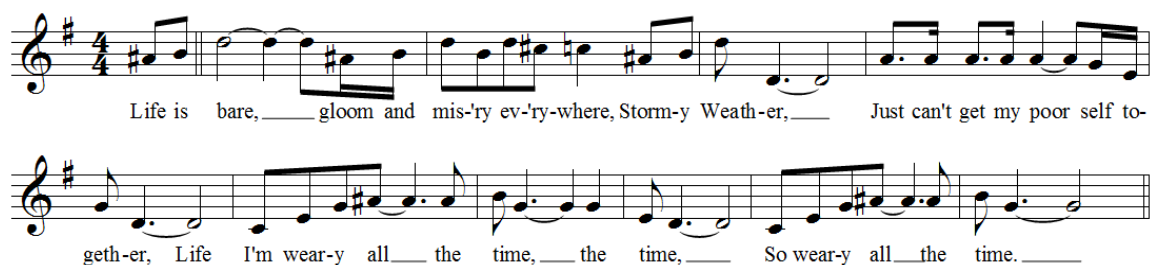


Figure 2.6 The second formal unit of the refrain of “Stormy Weather”

Stormy Weather (Keeps Rainin' All The Time)

from COTTON CLUB PARADE OF 1933

Lyric by Ted Koehler

Music by Harold Arlen

(c) 1933 (Renewed 1961) FRED AHLERT MUSIC GROUP (ASCAP) and TED

KOEHLER MUSIC CO. (ASCAP)/both Administered by BMG RIGHTS

MANAGEMENT (US) LLC and S.A. MUSIC CO.

All Rights Reserved Used by Permission

Reprinted by Permission of Hal Leonard Corporation

Because it would be inaccurate to designate this formal unit as a hypermeasure, the formal aspect of this ten-measure passage demands a distinct term. Jazz practitioners and theorists have called this sort of construct a “phrase,” which does seem appropriate. However, this solution creates another problem: if we say that the phrase here corresponds to the meter, initiating at the downbeat of its functional m. 1, we imply that the melody, which begins at the *pickup* to m. 1, is out of phase with what we are calling the phrase. Does the phrase begin with the hypermetrical downbeat or with the boundaries of the melody?⁶³ Further, in jazz practice, an improviser may well perform a melody over this formal unit with an entirely different rhythmic disposition without effecting the unit’s ten-measure duration.

⁶³ See Appendix 1, p. 152 for a discussion of this issue’s treatment in Rothstein, *Phrase Rhythm*.

Owing to these considerations, I propose that two distinct notions of “phrase” are pertinent. The *structural phrase* (s-phrase) is the phrase-level formal unit of the scheme, normatively but not necessarily congruent with hypermeter. In contrast, the *melodic phrase* (m-phrase) refers to the rhythm of the melody, but may also refer to the harmony or even rhythm section content, a distinction capturing the characteristic freedom for internal content to be organized independently of the s-phrase.⁶⁴ While both the s-phrase and the m-phrase are recognized in discussions of jazz, they are typically, and confusingly, referred to with the same blanket term, “phrase.”

This study asserts that the hypermeasure, the s-phrase, and the m-phrase are distinct constructs in jazz performance practice. The *hypermeasure* is a metrical unit. The s-phrase is a formal unit that captures aspects of the hypermeasure superseding issues of meter; while s-phrases are normatively hypermetrical, the concept also admits rhythmic structures that are not properly hypermetrical. The m-phrase refers to the rhythm of the melody, which is often out-of-phase with the measure level of the s-phrase.

Metaphor and Schematic Representation. The interaction between s-phrase and m-phrase is an important aspect of Schneider’s dynamic use of phrase rhythm. In order to visually represent each of these parameters and to map their interaction, I will use schemas grounded in metaphors from the domain of the physical world: s-phrases will be represented as containers, and m-phrase will be represented as motions within (or across the boundaries of) those containers.

⁶⁴ Berliner notes that musicians “create interest and suspense by improvising melodic phrases that cross over barlines and assume abstract rhythmic relationships to the meter,” *Thinking in Jazz*, 198.

In scholarship influential to the field of music theory, cognitive philosophers George Lakoff and Mark Johnson have argued, “Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature.” We are not normally aware of the system governing our concepts, but “Since communication is based on the same conceptual system that we use in thinking and acting, language is an important source of evidence for what that system is like.”⁶⁵ Music theorists have adopted Lakoff and Johnson’s brand of inquiry, examining the language typically used in descriptions of music as a window into the mental constructs shared by members of a culture in understanding their music.

Drawing from the work of Lakoff and Johnson, Janna Saslaw outlines a set of image schemas used to construct conceptual understanding of intangible domains such as music. “In order to structure domains that are not experienced directly, we map ... kinesthetic image schemas... onto more abstract domains. The mappings take the form of metaphors.”⁶⁶ Two such image schemas include the “container schema” and the “source-path-goal” schema. Saslaw notes that the container schema includes the elements of “an interior, an exterior, and a boundary between them” (218). In contrast, the source-path-goal schema includes:

(1) A source or starting point, (2) a destination or end point (or goal), (3) a path or sequence of contiguous locations connecting the source and the destination, and (4) a direction toward the destination. The basic logic of the schema is that in proceeding from a source to a destination along a path, one must go through all the intermediate points on the path; moreover, the further along the path you are, the more time has passed since starting (220).

⁶⁵ George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), 3.

⁶⁶ Janna Saslaw, “Forces, Containers, and Paths: The Role of Body-Derived Image Schemas in the Conceptualization of Music,” *Journal of Music Theory* 40, no. 2 (Autumn, 1996): 220.

Musicians often speak about music using image schemas, and we tend to represent each type of musical structure through the schema that matches its intrinsic properties most closely. The most salient feature of the s-phrase is the sense that it takes up space that may be filled, so I represent the s-phrase with a container schema. The m-phrase maps most directly onto what I take to be a variation on the source-path-goal schema—what I will refer to as the “motion schema”—which includes a departure and an arrival as boundaries to the motion itself.⁶⁷

A passage from Paul Berliner’s *Thinking in Jazz* gives us some clues as to the typical use of these concepts by jazz musicians:

When tracking the chords of a progression, veterans commonly experience the *basic structure itself as stationary*, and themselves as *moving through it*. The form’s successive harmonic *chambers* seem distinctly *multidimensional*. *Passage through them* has about it a feeling of time and *space*, as artists absorb and negotiate the aural features of their changing surroundings (*italics mine*).⁶⁸

Thus, jazz musicians discuss structures as containers—stationary, multi-dimensional chambers—and describe a sense of motion through those containers. This imagery evokes the traditional dichotomy between form as empty space and content as something moving through that space.

Drawing on these schemas, I represent the interaction between s-phrases and m-phrases with diagrams uniting the two. Figure 2.7 applies functional measure numbers (see p. 59) to an image of a container, visualizing the components of a normative, eight-

⁶⁷ Adolph Bernhard Marx, and particularly his concept of *Ruhe-Bewegung-Ruhe* (rest-motion-rest), is influential in my representation of the m-phrase as a motion. See Adolf Bernhard Marx, “Form in Music” [Die Form in der Musik], in *Musical Form in the Age of Beethoven: Selected Writings on Theory and Method*, ed. and trans. Scott Burnham (Cambridge: Cambridge University Press, 1997), 55–90.

⁶⁸ Berliner, *Thinking in Jazz*, 178–79.

bar hypermeasure. Each box stands for one measure, labelled as functional measures 1–8. I borrow Stefan Love’s use of differentiated measure-division styles to distinguish levels of meter.⁶⁹ A double bar indicates the eight-bar level, an angled bracket distinguishes four-bar *subphrases*, a solid line marks beat 3 of each subphrase, and broken lines correspond to beats 2 and 4 of each subphrase.⁷⁰ This container may be altered according to numerous deviations, as demonstrated in Chapter 3.

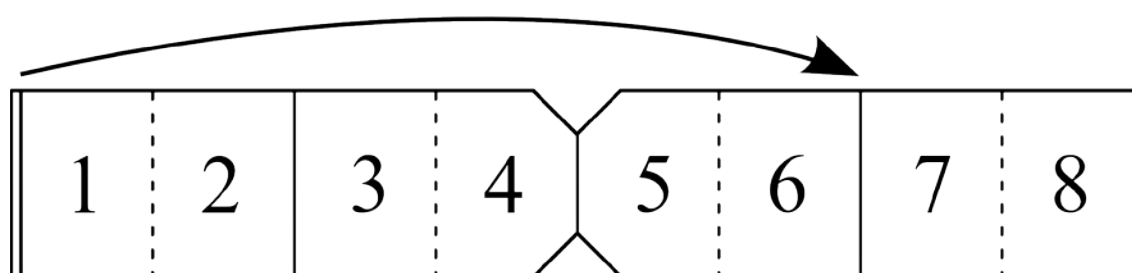


Figure 2.7 Visual schema for a normative eight-bar hypermeasure

The curved arrow above the container in Figure 2.7 represents an m-phrase in interaction with this s-phrase. The correspondence between this motion and the container is typical of an s-phrase with a turnaround (see p. 87): the m-phrase arrives at the downbeat of functional m. 7, leaving a structural gap of two measures between the arrival of the motion and the edge of the container. The interaction between m-phrase and s-phrase is crucially important to Schneider’s compositional style, and Chapter 3 is largely dedicated to the characterization of various container shapes and their interaction with melodic motions.

⁶⁹ Love superimposes brackets of various styles over notated scores; I adjust the specifics of his system for my usage apart from the score. See Love’s “Phrase Rhythm in Jazz,” 7.

⁷⁰ The term “subphrase” differs from “sub-unit,” discussed above, in that the former operates in the domain of form and the latter describes a hypermetrical unit.

Structural Phrase Onset Rhetoric

Because s-phrases mediate our sense of place in the music, the beginning of each new s-phrase is an important attentional point that I will call the *s-phrase onset* (SPO). Through a process known as “marking the downbeat,” rhythm section musicians often use strong metrical rhetoric (see p. 34ff.) to increase the perceptual salience of an SPO in what I call *SPO rhetoric*. Paul Rinzler was the first scholar to theorize SPO rhetoric as a component of interaction in jazz, labeling the process as “accenting the end of formal units.” Rinzler notes:

There is a very strong tendency for both the soloist and the rhythm section to highlight in some manner the end of a formal unit and the beginning of the next. ... The interaction is actually the nonverbal decision about when and how to use the end of a formal unit.⁷¹

Strategies for marking an SPO, then, depend on nonverbal interaction between performers. Each musician relies on strategies idiomatic to her instrumental role, a process that prior scholars have described in detail.⁷²

Two primary considerations interact in controlling the strength of an SPO’s rhetorical emphasis: (1) preparation in the moments leading up to the SPO, and (2) the acoustic gestalt of the SPO itself. In general, the strength of an SPO’s rhetoric is directly proportional to the salience of that SPO; conversely, musicians can choose not to mark an SPO by attenuating or withholding its preparation and accentuation. In Schneider’s music, but less centrally in mainstream jazz, melodic parallelism with a prior s-phrase or a significant harmonic change may also signal an SPO.

⁷¹ Paul Rinzler, “Preliminary Thoughts on Analyzing Musical Interaction Among Jazz Performers,” *Annual Review of Jazz Studies* 4 (1988): 157.

⁷² Rinzler, “Preliminary Thoughts,” and Paul Berliner, “Adding to Arrangements: Conventions Guiding the Rhythm Section,” Ch. 12 in *Thinking In Jazz*, 314–47.

An SPO may be prepared in any way along a continuum of intensity levels. Local intensification through increased loudness, rhythmic density, syncopation, dissonance of meter and pitch, or any combination thereof engenders an expectation for a container boundary. The longer and more intense the preparation, the more powerful the expectation, and thus the stronger the SPO rhetoric. In contrast, an ensemble may downplay an SPO by leaving it unprepared, choosing to maintain a consistently low level of intensity in the approach to the SPO.

Ensembles also choose how to treat the acoustic gestalt at the locality of the SPO itself, with options ranging from complete omission to significant emphasis. In a hypermetrical context, a moment of metrically prepared peak attention is a metrical accent regardless of the treatment of the SPO; metrical accents without surface articulation have been called “loud rests.”⁷³ However, an ensemble may undermine the SPO as a container boundary by downplaying it on the surface. Further, a lack of SPO rhetoric in a non-hypermetrical context may make it difficult for listeners to stay oriented within the phrase rhythm, creating a sense of obscurity which is often aesthetically appropriate.

On the other hand, an acoustic gestalt resulting from a loud attack of the crash cymbal, bass drum, or snare drum on an SPO may rhetorically reinforce a metrical accent by acoustically differentiating that moment from the remainder of the hypermeasure. In this case, the SPO receives rhetorical emphasis, which reinforces the attention it garners from the accumulation of lower structural levels of meter. In contexts lacking

⁷³ Justin London, “Loud Rests and Other Strange Metric Phenomena, or Meter as Heard,” *Music Theory Online* 0 no. 2 (1993), <http://societymusictheory.org/mto>. Reported in London, *Hearing in Time*, 107.

hypermeter, SPO rhetoric is a crucial strategy for communicating the boundaries of s-phrases.

An important function of SPO rhetoric is to help listeners keep their place in the form. Musicians generally invent content that will realize each s-phrase comprehensibly; not doing so risks compromising the ability to stay synchronized in the ongoing phrase structure. In a discontinuity known as “losing the form,” the audiation streams of different performers become out-of-sync as each understands herself to be at a different locality in the scheme at the same time; when musicians lose the form, it creates an obvious performance problem.⁷⁴ Through SPO rhetoric, an ensemble may communicate the locality of a new s-phrase by drawing the collective attention of multiple listeners to the SPO, thereby correcting discrepancies or affirming their agreement on their place in the scheme.

SPO rhetoric may reinforce the metrical accent at each SPO when hypermeter is regular, but it becomes all the more important when hypermeter is irregular. For example, in listening to the second s-phrase in the refrain of “Stormy Weather” (termed the “second formal unit” in Figure 2.6, above), we might assume that the SPO occurs in the ninth measure as is normative, restarting the functional measure cycle after m. 8, as in 12345678||12. However, this s-phrase is in fact ten measures, with the last two serving as additions to an otherwise normative eight-bar s-phrase.

Two cues help us stay synchronized with this deviational phrase structure. First, a rhythm section will typically withhold SPO rhetoric from the ninth measure, suggesting the possibility that the s-phrase has not concluded. Second, SPO rhetoric at the eleventh

⁷⁴ For “audiation stream,” see Chapter 1, p. 6ff.

measure indicates the rightful SPO. This retrospectively confirms that the ninth measure was not a container boundary and that the s-phrase's container is instead ten measures in duration.⁷⁵ As a result, experienced listeners will readjust their place in the music to understand the eleventh measure as a functional m. 1, thereby correcting any mistakes in synchronization of audiation streams.

In addition to its functional role in keeping listeners synchronized, SPO rhetoric allows ensembles to control how successive s-phrases combine into deeper formal levels. As we approach the end of an s-phrase, strong SPO rhetoric seals off its container from the subsequent one. Conversely, a deemphasized SPO may blur the boundary between one s-phrase and the next, resulting in the combination of the two containers into a single, larger one. By controlling the intensity of SPO rhetoric, jazz musicians control the motional trajectory of form as it unfolds in a dynamic system.

The preparation for an SPO and the treatment of the SPO itself may interact in various ways for different results. The choice to leave an SPO unprepared and weakly emphasized undermines the boundary between s-phrases, resulting in the impression of a single, larger container. This technique is useful, for example, at the beginning of a solo section, when the rhythm section attempts to provide the soloist with a "blank canvas." In this case, the bass and drums may provide a metrical grid through consistent expression of quarter notes in the ride pattern and walking bassline without rhetorical disturbance.

⁷⁵ In the 1933 recording of "Stormy Weather" featuring Ethel Waters, the strings surge to usher in functional m. 1 while the harmonic rhythm accelerates; in contrast, the ninth measure withholds strings, continues to repeat a static harmony, and subtly withdraws from the downbeat as if to say, "not here!" Karen Bottge made this observation in comments on an earlier draft. "Stormy Weather - Ethel Waters (1933)," *YouTube*, accessed March 20, 2016. <https://www.youtube.com/watch?v=zywZUhaUqMo>.

On the other hand, an SPO with strong rhetorical support achieves the effect of a firm s-phrase boundary and, in combination with intense SPO preparation, creates the feeling of propulsion into a new s-phrase container. As another option, an SPO may be prepared intensely but then left unaccented, resulting in a sense of deferred boundary. In this case, an ensemble may unite a metrical expectation with a strong gesture pointing to the SPO, only to withhold the expected culmination of that gesture—a strong acoustic gestalt on the SPO itself. Through this flexibility in the approach to each new SPO, musicians have dynamic control of the rhythmic and motional structure of the music as they determine it in real-time interaction.

Conclusion

Chapter 2 has described how rhythmic norms in mainstream jazz are shaped around rigid metrical regularity. At low levels, experienced listeners entrain to coordinated pulses ranging from the tactus to the measure level, prioritizing elements such as ride cymbal patterns, basslines, and harmonic rhythm as reliable purveyors of meter. These metrically organized elements help listeners coordinate their audiation streams with the scheme as expressed in the acoustic signal; they form a ground against which we hear surface complexity. In particular, polyrhythmic frameworks in rhythmic counterpoint operate as figures understood in relation to regular meter.

This sense of metrical rigidity normatively operates at levels higher than the measure: I posit a norm of eight-bar hypermeasures in mainstream jazz. In contrast to the research in music psychology suggesting an upper limit to metrical hearing of about 5 seconds, I claim that expectations particular to mainstream jazz encourage higher levels of hypermetrical perception. The expectation for the pulse at the measure level to cycle

through qualia associated with beats 1–4 creates a sense of four-bar sub-units, and the expectation for sub-units to pair at a higher structural level encourages the perception of eight-bar hypermeasures. Each measure-level downbeat in an eight-bar hypermeasure attains a dedicated functional measure label, 1–8, and the sense of traversing this span is a tangible part of the experience of listening to jazz in real time.

The eight-bar level of hypermeter requires consistency of meter at lower levels; even when a phrase is not hypermetrical, however, we nonetheless draw a sense of form from comparable spans of music. To describe formal units on the order of the eight-bar hypermeasure, I employ the term “structural phrase” (s-phrase), which is normatively eight measures in duration but may also have various other durations according to deviational devices I will introduce in Chapter 3. Melodies are often out of phase in relation to s-phrases, particularly those in the jazz tradition, so I take the melodic phrase (m-phrase) to be a construct distinct from the s-phrase. I visually schematize s-phrases as containers divided into measures, and represent the m-phrase’s relationship to such containers as arrows, representing a motion that departs from one locality and arrives at another.

While the acoustic signal in a jazz performance is often rather complex, cultural knowledge instructs us to privilege certain factors—especially the rhythm of the ride cymbal and bass and the harmonic rhythm—over other factors, which may be flexibly syncopated against the ongoing regularity of meter. In this way, we hear polyrhythmic frameworks as syncopations against low levels of meter and out-of-phase m-phrases as syncopations against higher levels of meter. Despite this complexity, the metrical rigidity of mainstream jazz permits a continually comprehensible sense of phrase rhythm as we

experience the music in real time. Schneider relies on this sense of phrase rhythm as a low-level formal unit in her music.

Chapter 3: Phrase Rhythm in the Corpus

Chapter 3 posits that Maria Schneider's music enters into a dialogue with tendencies of phrase rhythm established through the century-long jazz tradition. As James Hepokoski and Warren Darcy have argued regarding music in the decades surrounding 1800, works are placed into "a dialogue with a community-shared pool of preexisting works, probably including some well-known ones, that formed the new work's context of understanding."¹ Rather than comprising some body of previous works, I take the "context of understanding" for Schneider's music to be the normative structural phrase (s-phrase), described in Chapter 2.

Part I of Chapter 3 centers around two claims: (1) that the most common s-phrase design in Schneider's music is the normative one, and (2) that most deviational s-phrases dialogue with the norm directly. I confirm these claims through corpus research, an analytical method involving the empirical study of "large bodies of naturally occurring musical data."² The rationale for this technique may be traced to Leonard Meyer, who proposed that "Styles in music are basically complex systems of probability relationships in which the meaning of any term or series of terms depends on its relationships with all other terms possible within the style system."³ In this study, phrases are the "terms" under consideration, all of which fall into one of three categories: normative, dialogic (interactive with the norm), and independent (overriding the norm entirely). Dialogic and independent s-phrases both fall under the umbrella of the deviational (or non-normative) category.

¹ Hepokoski and Darcy, *Sonata Theory*, 9.

² Temperley and VanHandel, "Special Issues," 1.

³ Leonard B. Meyer, *Emotion and Meaning in Music* (Chicago: University of Chicago Press, 1956), 54.

An underlying premise of the approach is that experienced listeners understand how s-phrases operate in Schneider's compositional style through awareness of how relatively frequently each type occurs. In other words, our familiarity with the likelihood of any given s-phrase design shapes our expectations as we listen in real time. Hepokoski and Darcy describe tiered levels of default to explain what experienced listeners expect in a repertoire.⁴ Because the normative s-phrase is the first-level default within this corpus, we attend to each new s-phrase with the expectation that it will unfold normatively. The norm's influence therefore extends far beyond s-phrases that conform to it directly: nine other s-phrase types dialogue with it directly. Only three deviation types are independent, avoiding dialogue with the normative s-phrase entirely.

Part I of Chapter 3 describes the results of the corpus study and the procedure through which I formed it (also see p. 13ff.). Part II describes the twelve specific deviational devices that occur in the corpus.

Part I: The Corpus

Corpus Overview

The corpus considers all of the pieces satisfying three predetermined criteria: (1) they appear on Schneider's first five studio albums, (2) they are original compositions, and (3) they involve a steady pulse for some part of the track (that is, they are not entirely rubato). These criteria select twenty-four pieces. The [corpus data spreadsheet](#) includes a phrase-by-phrase account of each piece, a summary of data for each piece, and various tables summarizing the data for the entire corpus.

⁴ Hepokoski and Darcy, *Sonata Theory*, 10.

Table 3.1 shows the heading row and first row of data from the phrase-by-phrase spreadsheet for *Evanesence*; each row of data in phrase-by-phrase tables accounts for a single s-phrase. For this and every other s-phrase in the corpus, the table includes six categories of data: timestamp (the locality of the initial SPO), time (duration in absolute time), measures (the number of measures in the s-phrase), comments (annotations about the s-phrase), code (which indicates how a non-normative s-phrase diverges), and tempo (in beats per minute, averaged over the course of the s-phrase).

Table 3.1 Heading row and first row of data for *Evanesence*

| Timestamp | Time | Measures | Comments | Code | Tempo |
|-----------|------|----------|----------|------|-------|
| 00:00 | 7.62 | 4 | in 4 | p | 126 |

For each of the twenty-four pieces in the corpus, the reader can experience my phrase rhythm analysis in real time by following the phrase-by-phrase table from top to bottom while listening to the recording; each row represents a new s-phrase. In this example the value of “p” in the “code” column stands for “subphrase” (see the list of deviations and their codes in the third column of Table 3.2, below). I use thirteen different letters as codes—one for each device and another (b) to mark eight-measure s-phrases that are deviational despite their normative length.⁵ Normative s-phrases have the value, 8, in the “bars” column and have no value in the “code” column.

The “notes” column is flexible and optional; it is most useful in recording the functional measure schema for the s-phrase (see Chapter 2, p. 59) and measure numbers

⁵ The code “b” is excluded as a category from Table 3.2: it is not a category of deviation, per se, but instead functions as an instruction within my Excel workbook to exclude deviational eight-bar s-phrases from the normative category.

from the score, in square brackets. The “tempo” and “length” columns aid in following the analyses in real time. Tempo denotes the pulse level that I have determined as tactus while “length” gives the listener a sense of when to expect the next SPO. Free meter and rubato deviations, defined below, display no values in the “bars” column because each of these types of deviations lacks consistently comprehensible measures. Rubato deviations additionally display no values in the “tempo” column.

The data from the phrase-by-phrase tables feed into summative data for each piece, as in Table 3.2, from *Evanesence*. The first two columns summarize important data points for the piece; the three rightmost columns tally the number of s-phrases of each type according to the “code” column, as shown in Table 3.1.

Table 3.2 Summative data from *Evanesence*

| 02 Evanesence | | Deviation (code) | Count | Time |
|-------------------------|-------|------------------------------|--------------|-------------|
| Number of bars | 322 | Compression (c) | 2 | 00:22 |
| Number of phrases | 52 | Elision (l) | 1 | 00:05 |
| Number of 8s | 27 | Empty Bars (e) | 1 | 00:11 |
| % 8s (s-phrase count) | 52% | Free Meter (f) | 5 | 01:17 |
| Average bars per phrase | 6.85 | Held Bars (h) | 1 | 00:11 |
| Average time per phrase | 12.68 | Misleading metric cues (m) | 0 | 00:00 |
| Average Tempo | 135 | Mixed Meter, Deviational (d) | 6 | 01:35 |
| Total Time | 10:59 | Rubato (r) | N/A | 00:00 |
| Total Time (no rubato) | 10:59 | Subphrase (p) | 12 | 01:22 |
| % Rubato | 0% | Surge (s) | 0 | 00:00 |
| Time 8s | 06:24 | Ternary S-Phrase (t) | 0 | 00:00 |
| % 8s (absolute time) | 58% | Unfulfilled subphrase (u) | 7 | 00:54 |

In turn, the data for each piece feeds into data for the entirety of the corpus, reproduced in Table 3.3.⁶ Any deviation disqualifies an s-phrase from normative status. It is essential to point out that many s-phrases deviate from the norm in more than one way, and therefore the total number of instances of individual deviational devices recorded in the corpus data is greater than the number of deviational s-phrases.

Table 3.3 Corpus data summary

| The Corpus (Excluding Rubato Passages) | | |
|---|--------|---------|
| | Count | Percent |
| Normative s-phrases (count) | 672 | 61% |
| Normative s-phrases (time) | 140:45 | 63% |
| Deviational s-phrases (count) | 431 | 39% |
| Independent s-phrases (f and m) | 85 | 8% |
| Dialogic s-phrases | 346 | 31% |
| Normative or dialogic s-phrases | 1018 | 92% |

672 s-phrases (61%) are normative according to the characteristics established in Chapter 2: they exhibit isochronous pulses at every level, measures group into four-measure subphrases, and these subphrases pair into eight-measure s-phrases at a higher level. I rely on a strict standard of evidence, and the figure of 61% therefore underrepresents how often Schneider actually relies on the norm. In fact, I hear many more s-phrases as reasonably normative, such as the recurring metrical patterns in *Bulería*, *Soleá y Rumba* and *Hang Gliding*.

32 s-phrases in *Bulería*, *Soleá y Rumba* follow a 33222 pattern that, once memorized, allows unencumbered entrainment; likewise, the 3332 pattern in 52 of the s-phrases in *Hang Gliding* is normative besides a dropped beat every four measures. If I

⁶ For reasons to be discussed below, these figures exclude rubato passages.

were to include these two patterns in the normative category, the percentage of normative s-phrases in the corpus would swell from 61% to 69%. To avoid confirmation bias, however, I exclude these *nearly* normative s-phrases from the normative category. Even with this conservative standard, this corpus data confirms the first claim of this chapter—that the most common s-phrase design is the normative one.

In support of this chapter’s second claim, that most deviational phrases dialogue with the norm, the corpus data demonstrates that, of the 431 deviational s-phrases, 346 (80%) are dialogic whereas only 85 (20%) are independent.

Rubato

Rubato passages often resist perception as s-phrases, so their inclusion in the corpus demands some special consideration.⁷ Two obstacles complicate the categorization of rubato passages in the corpus. First, their lack of pulse prevents the perception of meter at a low level and, as a result, at higher levels as well. Second, Schneider’s strategies for organizing rubato passages are significantly varied and individualized, challenging the meaningfulness of broad analytical categories. I have considered four solutions to these obstacles, ultimately rejecting three: (1) the exclusion of rubato, which would ignore its importance to the repertoire; (2) dogmatic rules, which would have too many exceptions to be meaningful; and (3) ad hoc determinations, which would undermine the summative ethos of corpus study. I have instead opted for a fourth solution, categorizing all rubato passages as independent. This section will describe in detail the context and ramifications of that determination.

⁷ I use “passage” as a generic term to describe any continuous span of music when the specifically defined term of “s-phrase” is contextually inappropriate. This term is particularly important for rubato passages, which I do not consider as s-phrases.

Because rubato passages are non-isochronous at every structural level, many deny metrical entrainment at the lowest levels and therefore do not accumulate into s-phrases in the sense intended in this study. The normative s-phrase, as described in Chapter 2, depends on the accumulation of meter at low structural levels: with no perceptible measure level, there can be no sense of qualia cycle and therefore no opportunity to pair sub-units into the eight-bar hypermeasure. Apart from rubato passages, all of the deviations described in Part II of this chapter involve perceptible measures—at least at the lowest structural level—and a sense of qualia therefore emerges. But rubato passages that lack this lowest level of meter deny the qualitative cycle at the measure level and therefore deny s-phrase formation.

Other rubato passages, such as a series of chorale-style s-phrases in *Cerulian Skies* (12:18 / m. 185), do interact with normative s-phrase organization, which would seem to qualify them as dialogic deviations. The level of dialogue with the norm varies considerably from one instance to the next, however, and the threshold from dialogic to independent is often too fuzzy to make categorical determinations with any consistency. In the absence of a definitive decision-making guideline, I include all rubato passages in the independent category.

On one hand, this decision lacks nuance, lumping a wide range of approaches to rhythmic organization into a single category. On the other hand, rubato passages are exceptionally individualized in Schneider's style: it seems that their very function is often to override norms in favor of uniquely designed rhythmic organizations. The corpus is intended to provide a bird's eye view of the repertoire as a whole, not to analyze every s-phrase individually. An overly dogmatic application of rules would undermine a chief

merit of the corpus approach—the breadth of its insight into the repertoire. An opposite approach—the ad hoc categorization of every individual phrase—would produce the same deleterious result.

Since rubato passages are not consistently and clearly comprehensible as successions of discreet s-phrases, it is often impossible to ascertain the number of discrete s-phrases that occur within a passage. I therefore quantify the prevalence of rubato in terms of absolute time rather than s-phase count. As a unit of measurement, absolute time resonates more directly with the musical reality of rubato passages. I also track the absolute time of all of the other s-phrase types for each piece and for the corpus as a whole, providing a sense of rubato’s prevalence relative to the other s-phrase types in a common unit of measurement.

The consideration of the corpus in terms of absolute time and the inclusion of rubato passages in the independent category apparently weaken support for this chapter’s second claim, that most non-normative s-phrases are dialogic rather than independent. Table 3.4, the corpus’s absolute time figures including rubato, suggests a 1:1 proportion of dialogic and independent passages.

Table 3.4 The corpus by absolute time, including rubato

| | | |
|-----------------------|--------|-----|
| Normative | 140:45 | 54% |
| Independent (f, m, r) | 59:49 | 23% |
| Dialogic | 60:15 | 23% |
| Normative or dialogic | 201:00 | 77% |

Three factors mitigate this apparent challenge to this chapter’s claims. First, absolute time is not the most relevant unit of measurement to test my claims, which are

framed in terms of s-phrase counts. This study's mode of inquiry, designed particularly for "in-time" (i.e., non-rubato) passages (86% of the corpus in absolute time), simply does not resonate strongly with rubato passages.⁸ The inclusion of absolute time data is a compromise for the sake of including rubato passages, which are clearly an important part of Schneider's style, comprising 14% according to absolute time. But absolute time data should not be taken as a central concern of this study.

Second, rubato passages often progress with an exceedingly low density, understood as the number of tones per absolute time. In other words, in many rubato passages, a small number of tones occur over a long span of time relative to in-time passages. That a rubato passage takes a lot of absolute time does not mean it represents a significant amount of the piece's content from a structural perspective.

As a third mitigating factor, while many rubato passages depart entirely from the normative s-phrase organization, many others do interact with the norm. For each reasonably dialogic rubato phrase counted as independent instead of the dialogic, the total absolute time of independent phrases would decrease and the total absolute time of dialogic phrases would increase. In other words, Table 3.4 (above) underrepresents the total time of dialogic passages and exaggerates the total time of independent passages. As a result, this chapter's second claim holds even as measured in absolute time: the proportion of dialogic phrases as measured in absolute time is surely greater than the proportion of independent phrases.

⁸ Rubato in Schneider's music would require its own theoretical apparatus. While such an endeavor would be fruitful for future research, it is outside of the aims of the present study.

This section has quantified the prevalence of various types of s-phrases according to count, excluding rubato, and according to absolute time, including rubato. The results support this chapter's initial claims, that the most common s-phrase design in Schneider's music is the normative one and that most deviational s-phrases dialogue with the norm directly. Further, it is clear that Schneider relies on the norm either directly or as a dialogic source in a significant majority of the s-phrases that she composes. Familiarity with the normative s-phrase guides the hearing of 92% of in-time s-phrases in this corpus by count and 77% by absolute time—an overly conservative figure. Based on this corpus data, the experienced listener's knowledge of the norm does in fact reliably guide real-time listening, even when the norm is not literally present on the surface of the acoustic signal.

Corpus Formation

This study assumes that s-phrase onset rhetoric (SPO rhetoric) is typically comprehensible to the listener, audibly signifying the boundary between one s-phrase and the next. I analyzed much of the corpus by ear before looking at notated scores, collecting corpus data by importing each track into the open source digital audio workstation, *Audacity*, and creating a label for each SPO. Each label marks a locality with precise timestamp information, determining an absolute representation of the locality of each SPO, which is listed in the leftmost column in each piece's phrase-by-phrase table.

Categorization relies primarily on the determination of SPO localities based on hypermeter and SPO rhetoric, but it also considers other secondary factors. The relationship between a phrase and its surrounding context, other iterations of the passage in the same piece, and similar passages throughout the corpus may contribute to a

hearing. While most phrase determinations are straightforward and would likely be generally accepted by experienced listeners, others—particularly in more complex or ambiguous passages—are to some extent subjective, and multiple interpretations are often possible.

This multiplicity of hearings is expected, and welcome, in the consideration of complex cultural artifacts like musical recordings. I considered as many different interpretations as possible, eventually choosing the most convincing analysis for the sake of developing a single interpretation of each s-phrase for inclusion in the corpus data. Part II of this chapter describes criteria guiding the categorization of each type of s-phrase. However, my categorization of individual s-phrases was ultimately subjective, prioritizing musicality over dogmatic application of rules and definitions. Each decision reflects many hearings of the entire corpus, in-depth study of each individual piece, and careful consideration of the interaction of pertinent factors. This corpus study aims for objectivity in the treatment of its data, but that data in itself is a product of my own analysis, which necessarily involves interpretation.

Schneider conventionally notates SPOs with a double barline and a rehearsal number, embedding the score with her sense of phrase structure, and my SPO determinations usually corresponded to these indications. This accuracy should be unsurprising: in general, Schneider's style is characterized by congruence of hearings between the composer, the ensemble, and other experienced listeners. Phrase endings leave room for significant flexibility—most of the dialogic deviations occur when the end of an s-phrase occurs too early or too late—but phrase beginnings are usually clear.

The scores did sometimes contradict my aural perception of SPO rhetoric. In these cases, I attempted to hear the relevant passage from as many perspectives as possible, with a particular concern for the composer's notation. When the notation clarified a mishearing, presenting a plausible interpretation of the recording, I altered my interpretation accordingly. However, I retained my original interpretation for passages in which the auditory evidence for SPO rhetoric seemed stronger than the score's notated double barlines or, put another way, when the notated double barlines were not significantly more plausible as SPOs than the aurally derived one. Such discrepancies are relatively rare, typically arising in passages characterized by ambiguity, in which the prioritization of different parameters might encourage various hearings.

In this study the listener's perspective is privileged over the composer's hearing, interesting and relevant as the latter may be. It is possible for the composer to hear a passage in one way and for the cues in the acoustic signal to suggest a different hearing. The composer's internal representation is often a specific one, formed conceptually during the compositional and performance processes. The listener's perspective, on the other hand, is more vague and variable: we rely on our ability to accurately abstract structure from an acoustic signal. Cultural knowledge of a style does guide us in our decisions, but we can never hear exactly as the composer does because we lack her intimate knowledge of the music, awareness of its conceptual origins, and prioritization of structural parameters in any given passage.

Part II: Deviational Phrase Types

SPO rhetoric provisionally suggests the onset of a new s-phrase even when it is incongruent with the anticipated hypermetrical accent at the eight-bar level. This ability for SPO rhetoric to perceptibly mark the beginning of an s-phrase enables us to comprehend phrase rhythm even when it diverges from stylistic norms. This is a central premise of the study: *by interacting with listener expectations engendered by century-old norms—and the traditional performance practices built around those norms—Schneider’s use of phrase rhythm is widely flexible yet generally perceptible*. Chapter 2 noted that rhythm section content, and particularly the drums, is the most important source for SPO rhetoric in common-practice jazz; this holds true in Schneider’s recordings. The rhythm section, and particularly the drummer, plays a significant role in expressing SPO rhetoric.

Because the rhythm section musicians bear particular responsibility for the expression of phrase rhythm in Schneider’s music, they use the rehearsal process as an opportunity to consult the composer on any potential interpretive discrepancies.⁹ The congruence between Schneider’s hearing and the drummer’s phrasing is apparent throughout these recordings. As a result, expressions of SPO rhetoric in the drums usually indicate a locality’s structural importance reliably.

In Schneider’s highly composed (i.e., not improvised) style, she compensates for the absence of the predetermined harmonic/metrical schemes of mainstream jazz by bolstering the perceptibility of SPOs through multiple types of cues in addition to rhythm section content. Harmonic disruptions, melodic parallelisms, orchestration changes, and

⁹ Justin Williams suggests the importance of rehearsals in Schneider’s creative process. Williams, “Maria Schneider.”

major melodic entrances are highly correlated with SPOs in Schneider's style, so I take them to fall under the umbrella of SPO rhetoric in her music.¹⁰ SPO rhetoric is usually clear because SPOs usually occur at localities where several types of cues coincide.

We perceive the onset of a new s-phrase through the interaction of hypermeter and SPO rhetoric. A sense of SPO is clearest when these two modes of perception correspond in time. As we traverse a normative s-phrase in real time, we expect an SPO after the completion of eight measures, at the downbeat of the ninth measure. SPO rhetoric at that locality confirms this expectation beyond doubt, clarifying that a new s-phrase has begun. Even if no SPO rhetoric confirms the hypermetrical accent, we presume that the phrase rhythm is normative in the absence of contradictory evidence.

Figure 3.1 schematizes a normative s-phrase in interaction with a melodic phrase (m-phrase). In normative contexts we expect a consistent *functional measure cycle*, through which functional measures 1–8 emerge in numerical order, without interruption, and functional m. 8 proceeds directly to functional m. 1 of the subsequent s-phrase. Numerals 1–8 label the eight measures represented in the container schema; each measure is separated from the next with a boundary designating its hypermetrical level. Double barlines denote the eight-bar level, the angled bracket represents the boundary between subphrases, the solid lines stand for the two-bar level, and dotted lines divide the measure level.

¹⁰ All of these additional types of SPO rhetoric also occur in common-practice jazz, but they are neither as integral nor as highly correlated with SPOs as in Schneider's style.

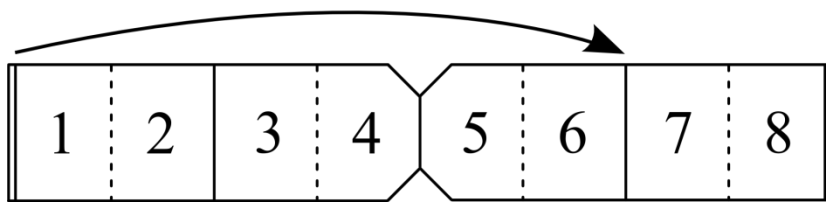


Figure 3.1 The normative s-phrase with a corresponding m-phrase

This s-phrase corresponds with an m-phrase that arrives at functional m. 7, signified with the curved arrow above the container, an m-phrase design that occurs frequently due to its arrival at the onset of the “turnaround.”¹¹ The s-phrase, however, is normative on its own terms based on its duration of eight measures and subdivision into four-measure subphrases; m-phrase design is a secondary consideration. This section will describe the deviations that alter this schema in Schneider’s compositional style.

A brief review of the turnaround’s function and rhetoric will be useful here. Not all s-phrases have a turnaround, but many do, and the structural importance of the turnaround in jazz should not be underestimated. Figure 3.2a diagrams the most paradigmatic turnaround, which pushes into the subsequent s-phrase through forward-directed energy. Alternative designs developed midway through the twentieth century: Figure 3.2b shows a tone of arrival that is sustained through the turnaround, and Figure 3.2c diagrams a decrease in intensity through continued melodic activity.

¹¹ The arrowhead’s point corresponds to the onset of the final tone in the m-phrase, the “tone of arrival.” Tones of arrival always have duration, sometimes represented through line extending forward past the onset (see Figure 3.5, p. 94). For simplicity’s sake, I only include such an extended line when it is directly relevant to the discussion.

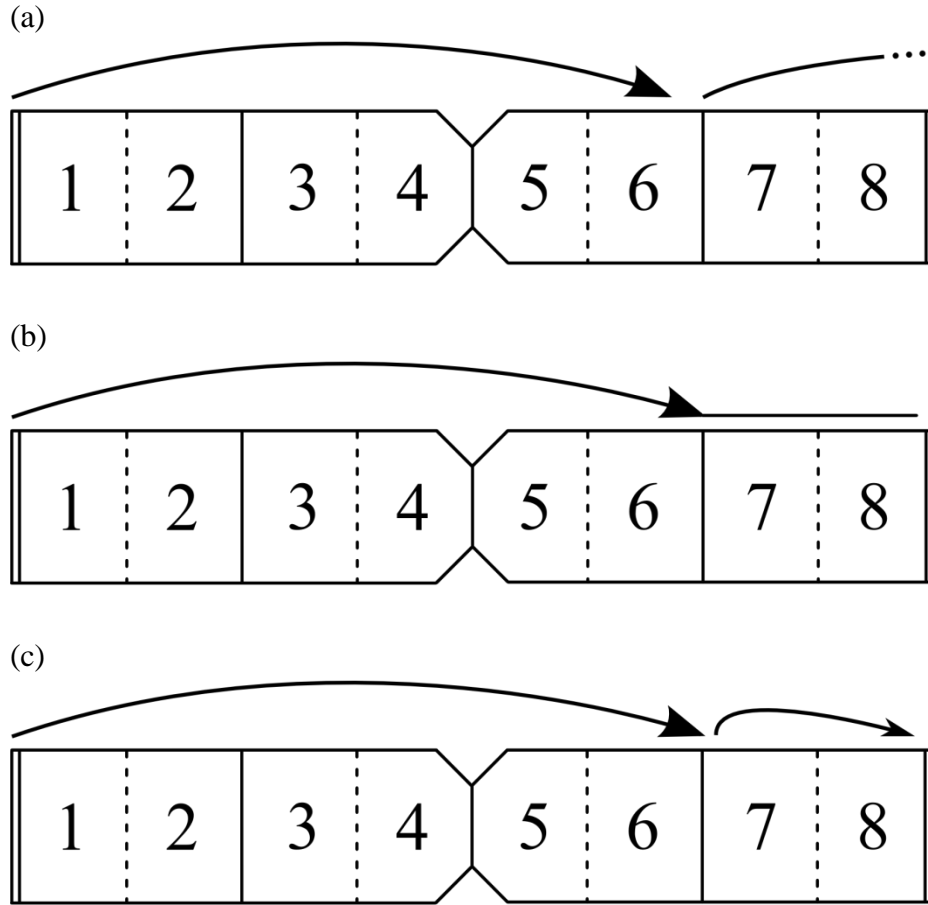


Figure 3.2 The paradigmatic turnaround (a) and two alternatives (b and c)

Many deviations are readily perceptible in real time: the listener hears a disturbance in hypermetrical regularity and recognizes a new s-phrase based on SPO rhetoric even if it is incongruent with hypermetrical expectations. Upon hearing SPO rhetoric either too early or too late relative to an expected hypermetrical accent, the possibility emerges that the SPO rhetoric has overridden the functional measure cycle and marked the beginning of a new s-phrase. That possibility is confirmed or denied based on the sense of functional measure signaled by the subsequent content. For example, if the second measure after the SPO rhetoric has content appropriate for functional m. 2 qualia,

the third measure has m. 3 qualia, and so on, the new sense of orientation within the s-phrase retrospectively confirms the SPO *rhetoric* as the *actual* SPO of a new s-phrase.

The following is a discussion of the various deviational s-phrase types found within the corpus.

Subphrase and Ternary S-Phrase (135 s-phrases, 12%)

The two subphrases in a normative s-phrase are generally associated with each other in that their texture either remains static or manifests a continuous sense of trajectory. Subphrase and ternary s-phrase deviations are exceptions, representing contexts in which hypermeter is normative up to the four-bar level yet these four-bar units do not group normatively into twos at a higher level. Because the four-bar level is hypermetrical, and because it is an essential component of normative phrase rhythmic practice, subphrase deviations and ternary s-phrases are conceptually privileged over other deviations as essentially complete formal units. Therefore, any of the deviations listed below may be applied to subphrases or ternary s-phrases.

Subphrase (coded p; 110 s-phrases, 10%). A subphrase deviation is a four-measure s-phrase. Most subphrases are subordinate segments of larger structural phrases, but the *subphrase* becomes a deviational type when it does not pair with another subphrase at a higher structural level. In this case, the s-phrase follows the norm for an eight-measure phrase throughout functional mm. 1–4, but the fifth measure exhibits SPO rhetoric followed by a change in texture, thus cutting short the structural phrase after four measures. In general we perceive a subphrase deviation when the s-phrases surrounding a four-measure subphrase are independently complete and texturally contrasting.

Figure 3.2 (below) notates and schematizes *Coming About* 10:43 / m. 261, a prototypical subphrase deviation. This s-phrase occurs during a saxophone solo after fifteen normative s-phrases. As is typical of Schneider’s compositions, composed background figures have entered at this point; backgrounds lend support to the soloist, develop melodic materials, and set up the subsequent section. Up to this point, the trumpets have been playing in a low register, blending into the saxophone and trombone sections. However, beginning with the figure notated in 3.2a, the trumpets shift to this high register and increase in volume, a common tactic for building excitement towards the end of a solo in big band arranging.

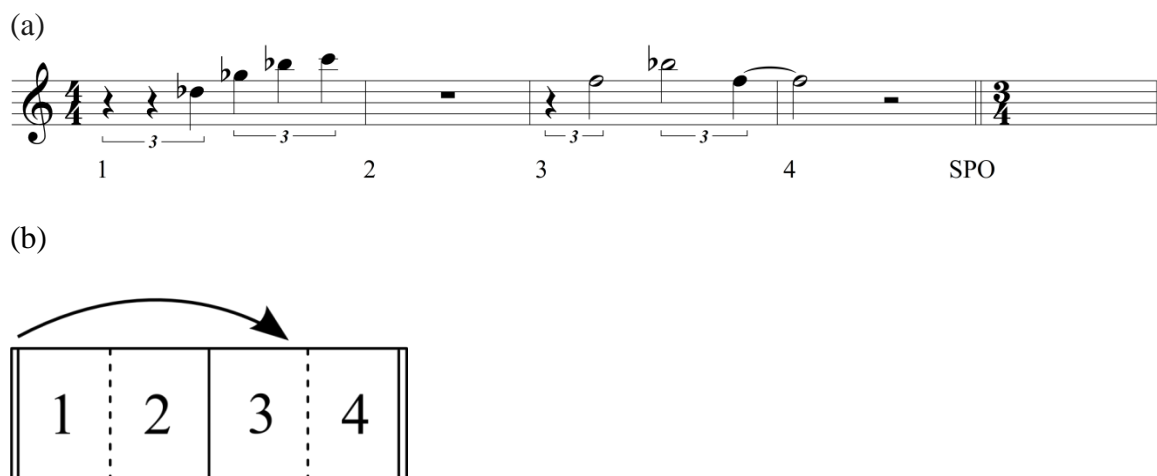


Figure 3.3 Schema and notation of *Coming About* 10:43 / m. 261¹²

This dynamic emergence of the trumpets occurs after the completion of the previous eight-measure s-phrase. However, after proceeding normally through functional

¹² M-phrase arrowheads point to the onset of the “tone of arrival.” When the release of the tone of arrival is relevant to the discussion, as in Figure 3.5, below, a line extending to the right to represent the tone’s duration.

measures 1–4 as notated, the s-phrase ends before any opportunity for a second subphrase. Following the double barline given in Figure 3.3a and b (above), the fifth measure not only exhibits unambiguous SPO rhetoric through a harmonic change and strong emphasis in the rhythm section, but it also changes meter to 3/4 and enters what is clearly a transition out of the solo section based on its change in texture and trajectory of decreased energy. *Coming About* 10:43 is a self-contained s-phrase because both of the surrounding s-phrases—the s-phrases at 10:31 and 10:49—are distinct from it in content and independently complete as normative s-phrases.

Ternary S-phrase (coded t, 25 s-phrases, 2%). While four-measure subphrases are normatively paired into an eight-measure s-phrase at a higher structural level, it is also possible for three subphrases to be grouped as a single, twelve-measure s-phrase (4+4+4). The tradition of twelve-measure blues forms is predicated on this procedure, but ternary s-phrases are also common outside of the blues genre, as in the fourth s-phrase in “All the Things You Are” by Jerome Kern and Oscar Hammerstein II (“Someday my happy arms will hold you...”). In the context of Schneider’s compositions, subphrases may be grouped into a *ternary s-phrase* if the passage meets two conditions: (1) the texture either remains static or continuously expresses a single, directed trajectory, and (2) the surrounding s-phrases are independently complete. The resulting twelve-measure span could be as easily counted as a normative, eight-measure s-phrase with a subphrase appended either to the beginning or the end, grouped as 4+8 or 8+4. However, if all three subphrases are related in texture, I find the ternary s-phrase to be a more meaningful construct.

Figure 3.4 represents a ternary s-phrase, as exemplified by *Choro Dançado* 3:48 / m. 136.¹³ This s-phrase occurs during the backgrounds in a saxophone solo. Before and after the schematized s-phrase, the rhythm section plays a dry, percussive texture: the piano plays a staccato offbeat figure, the drummer avoids cymbals, and the bass player plays his downbeats with short durations. In contrast, this s-phrase is characterized by sustained tones in the piano, bass, and cymbals; the horn section enters here with long, sustained chords lasting four measures each. This textural broadening is a perceptible contrast from the surrounding s-phrases, both of which are independently complete. Because this twelve-measure span is texturally unified, it would not be meaningful to divide its subphrases into distinct s-phrases.

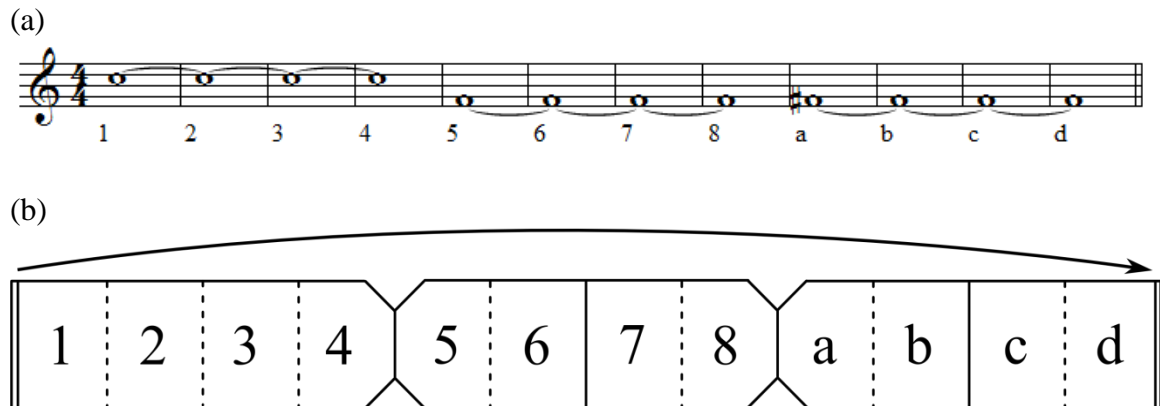


Figure 3.4 *Choro Dançado* 3:48 / m. 136 as ternary s-phrase

Addition (80 s-phrases, 7%)

Additions, of which there are eighty instances in the corpus, usually involve one or two measures that interrupt the functional measure cycle by delaying an expected

¹³ This s-phrase instantiates a “faux elision,” discussed below: the m-phrase arrives at the SPO without cutting short the qualia cycle of its final subphrase.

qualia.¹⁴ An addition has neutral metrical rhetoric: we recognize that it disrupts the qualia that we expect for that locality, but its rhetoric does not convincingly suggest alternative qualia. Instead, an addition pauses the functional measure cycle, which subsequently continues as if the added bars had not occurred. Added bars are usually unambiguous deviations; the neutrality of their rhetoric is generally obvious in context, understood in opposition to the clarity of rhetoric expected at that locality.

Most often additions occur after an s-phrase's eighth measure where the strong metrical rhetoric expected of an SPO is undermined by neutral metrical rhetoric, provisionally suggesting that no new s-phrase has emerged. Additions also occur, however, after earlier functional measures. After an addition, we continue to interpret each new measure as an addition until clear SPO rhetoric emerges. Additions are elaborations in a hierarchical sense, as are many of the dialogic deviations: they may be reduced out in an analysis of the s-phrase's underlying paradigm.

Held Bar (coded h, 39 s-phrases, 4%). Held bars, empty bars, and surges—the three subtypes of the addition—all involve the enlargement of an s-phrase container through extra measures with neutral qualia, but they differ in the nature of the content filling those measures. In a *held bar* deviation, Schneider ties the tone of melodic arrival (often harmonized as a chord) past the downbeat of the next expected functional measure, delaying the qualia expected at that locality. Figure 3.5a presents *Wyrgly* 6:13 / m. 152, a typical example of the “held bar,” with functional measure labels below the staff. This m-phrase begins with an *anacrusis* (or pickup): while the melody in the first notated

¹⁴ Additions, as well as several of the subsequent deviation types, may remind some readers of William Rothstein's categories for phrase alteration as advanced in *Phrase Rhythm*. See Appendix 1, p. 152, for a discussion of the present study's relationship to Rothstein's work.

measure occurs within the boundaries of the previous s-phrase, it clearly initiates an m-phrase associated with the s-phrase that begins in the second notated measure, marked below the staff as functional m. 1. Figure 3.5b reflects this out-of-phase interaction between m-phrase and s-phrase by misaligning the arrow schema to the left of the container schema.



Figure 3.5 Held bar in *Wyrgly* 6:13 / m. 152

Figure 3.5b represents the arrival of this m-phrase on beat 2 of functional m. 8 with an arrowhead. The precise locality of a melodic arrival is the onset of the final melodic tone in an m-phrase. However, because tones have duration, the release of the tone occurs at a later locality; I represent the duration of a tone of arrival with a line continuing to the right of an arrowhead. After the m-phrase arrives at the arrowhead

towards the beginning of functional m. 8, the horns hold the tone, reflected by the horizontal line extending to the right.

Without altering the internal content of the melody, Schneider could have composed this s-phrase normatively by initiating a new s-phrase after functional m. 8, notating an SPO through a double bar line in the rhythm section parts to encourage them to express SPO rhetoric. This hypothetical re-composition eliminates the final, tied whole note in Figure 3.4a, but it does not affect the motion of the m-phrase, which has already arrived. Rather than fulfilling the expectation for a container boundary at the downbeat of the ninth measure, the formal space of this s-phrase increases in relation to the norm.

Figure 3.5b schematizes the expected SPO with a double barline after functional m. 8, and it notes the subversion of that expectation with a strikethrough. The tone of arrival extends into a ninth measure, labeled “H” for “held.” Although functional m. 8 sustains the tone of melodic arrival, it is not a held bar because it is not responsible for a deviation from the eight-measure norm for s-phrase length. It is the additional ninth measure that alters the length of the s-phrase.

Schneider uses two types of notation to guide the ensemble into this particular nine-measure s-phrase construction. First, a double barline and rehearsal number after the ninth measure mark the end of the s-phrase in the score and all of the individual musicians’ parts.¹⁵ Second, the drum part has the performance instruction, “Fill,” in functional m. 8, followed by an additional performance instruction, “Fill to set up double time feel,” in functional m. 9. Professional drummers recognize that a drum fill leading into a double barline calls for a well-prepared SPO; by explicitly indicating that this fill

¹⁵ This presumes professional notation copying protocol, in which the parts match the score and each other in the placement of double barlines and rehearsal markers.

should begin in functional m. 8, continue through functional m. 9, and end at a double barline, Schneider spells out the phrase rhythm for drummer Dennis Mackrel; his execution of the phrase design through SPO rhetoric is unambiguous on the recording.

Because the m-phrase arrives on time to be constrained within an eight-measure container, this deviation in s-phrase length is not necessary to accommodate the length of the m-phrase; it is an expressive choice. This s-phrase is the last of eleven in a saxophone solo that is otherwise comprised of normative s-phrases. The solo's harmony dialogues with the postbop sub-tradition, lacking both a clear sense of tonic and standard harmonic formulas for cadences. The role of this deviation, then, is to pique the listener's attention at the end of the saxophone solo, as if to say, "Take notice: formal crossroads." In this way, *Schneider signifies the end of one section and the beginning of the next while maintaining a sense of harmonic ambiguity, using rhythmic rather than harmonic means to signal what is essentially a cadence in her style.* The subsequent phrase begins a double time transitional passage that leads to the trombone solo.¹⁶

Empty Bar (coded e, 28 s-phrases, 3%). A second type of addition, the *empty bar*, defers an SPO through rests in the melody while the rhythm section sustains an s-phrase. Like held bars, empty bars have neutral rhetoric, deferring the progression of the functional measure cycle. While held bars usually sustain the ensemble's energy in preparation for the subsequent s-phrase, empty bars often defuse energy.

¹⁶ "Double time" refers to a common procedure in which the tempo doubles. In this passage the tactus goes from 129 to 265 beats per minute (bpm). The second tempo supersedes the doubled original tempo, reflecting a desirable effect of increased energy. Nonetheless the term reflects relative representation, and we recognize that the quarter note in the old tempo becomes the half note in the new tempo.

Figure 3.6 presents the last s-phrase from the trumpet solo in *Night Watchmen* 8:40 / m. 214; like *Wyrgly* 6:13 / m. 152, this deviation occurs in the last s-phrase of an otherwise normative solo section, signaling the end of the solo and drawing our attention to the subsequent section—in this case, the beginning of the recapitulation. Again, the strikethrough of the double barline represents an expectation for an SPO that is deferred by metrically neutral rhythm section content, and “E” stands for “empty.” By diverting this expectation and forcing the listener to wait for the new s-phrase, Schneider draws attention to the formal importance of the large-scale melodic return.¹⁷

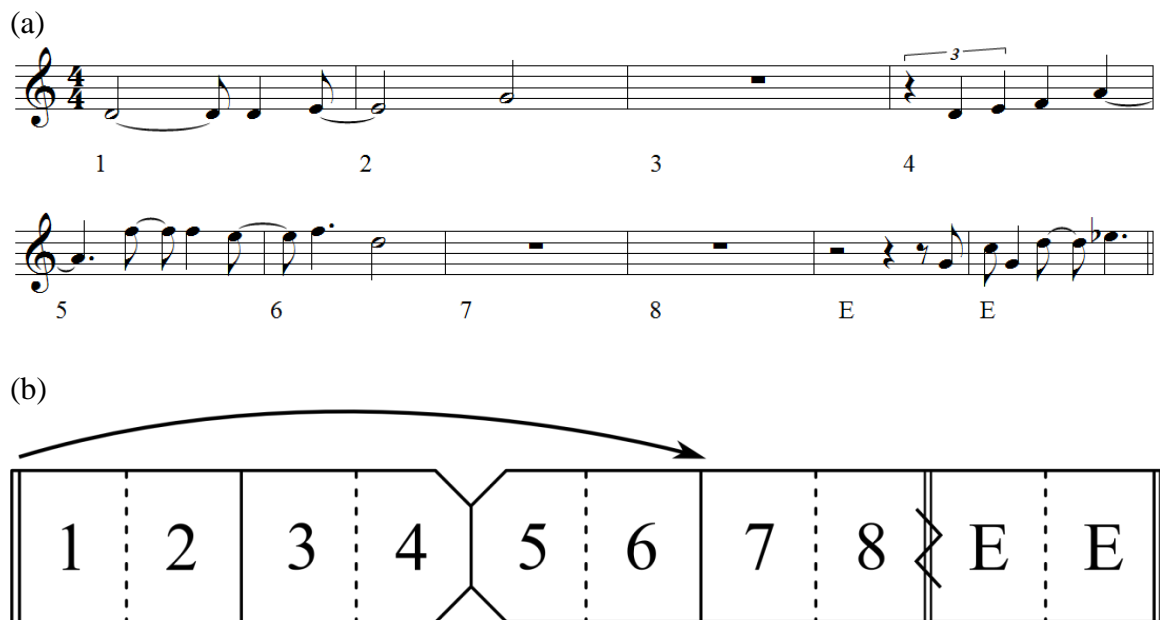


Figure 3.6 Empty bars in *Night Watchmen* 8:40 / m. 214

Surge (coded s, 13 s-phrases, 1%). Figure 3.7b schematizes a third type of addition, the *surge*, which is symbolized “S” in numerical or container schemas. It differs

¹⁷ Figure 3.6b excludes the melodic figure notated in the last measure of Figure 3.6a, which is associated with the subsequent s-phrase as an anacrusis. The drum part corresponding to this figure has the instruction, “Big fill---lead in.”

from held bars in that the melody remains rhythmically active into the addition rather than being sustained. Surges vary expressively: *Concert in the Garden* 3:14 / m. 64 (shown in Figure 3.7a) energetically boosts the melody into the next s-phrase; *Coming About* 3:15 / m. 78 feels like an afterthought to a completed s-phrase; *Allegresse* 7:32 / m. 182 sustains a consistent level of intensity; and *Choro Dançado* 1:56 / m. 77 dissipates the intensity of the exposition before the SPO, which initiates the solo section. Therefore, this device takes on a number of different characters, unified under the surge category by the sense that the melody has continued past an expected SPO and the s-phrase has grown to accommodate it.



Figure 3.7 Schema for a surge deviation in *Concert in the Garden* 3:14 / m. 64

The subphrase and ternary s-phrase deviations are conceptually privileged over simple additions. Therefore, an s-phrase with two measures of content followed by two held bars (12HH) is instead taken as a subphrase deviation (1234) because the held bars

function to fill out the s-phrase into the essentially complete unit of the subphrase. Further, simple additions and other deviations may be applied to subphrase deviations and ternary s-phrases; thus the design of 1234HH in the introduction to *Waxwing* is an addition to a subphrase deviation, recorded as having two different deviations—subphrase and held bars.

Deletion (103 s-phrases, 9%)

Unfulfilled subphrase (coded u, 53 s-phrases, 5%). The *unfulfilled subphrase* begins normatively until SPO rhetoric disrupts the functional measure cycle by occurring too early relative to the norm. The subphrase is promised based on a normative beginning but disturbed before its completion; hence, the s-phrase is unfulfilled. The SPO almost always replaces the third or fourth measure of a subphrase. Unfulfilled subphrases occur most commonly in an s-phrase's second subphrase, in functional m. 7 or 8, but they also sometimes occur as an s-phrase's first subphrase (as in a subphrase deviation) or third subphrase (as in a ternary s-phrase).¹⁸ Five-measure unfulfilled s-phrases are rare because the fifth measure can usually be read as an addition to a subphrase deviation rather than a deletion from the eight-measure s-phrase, but see my reading of *Cerulean Skies* 8:28 / m. 136 in the [corpus data spreadsheet](#) for an exception.

Bulería, Soleá y Rumba 12:19 / m. 247, shown in Figure 3.8, exemplifies the unfulfilled s-phrase. Its melody is internally organized as two-measure units, repeated with variation. As we enter the second subphrase and proceed through functional mm. 5–6, we expect a fourth iteration of this unit to fill out the normative eight-measure phrase. However, a change in harmony and texture at functional m. 7 serve as SPO rhetoric,

¹⁸ S-phrases commonly have more than one type of deviation.

provisionally suggesting that we have entered a new s-phrase. An SPO two measures later would fill out this s-phrase according to the norm, but instead the subsequent s-phrase is a four-measure subphrase deviation, retrospectively confirming that the s-phrase at 12:19 / m. 247 abandons the normative phrase design.

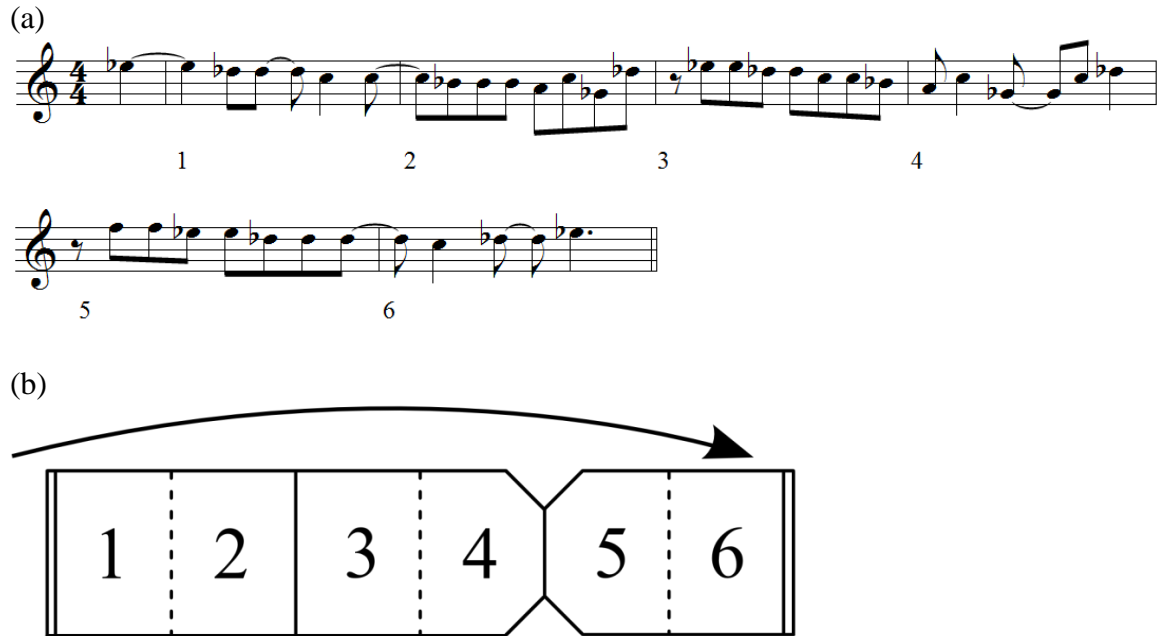


Figure 3.8 *Bulería, Soleá y Rumba* 12:19 / m. 247 as an unfulfilled subphrase

Compression (coded c, 27 s-phrases, 2%). In a *compression*, the listener skips forward in the functional measure cycle and the length of an s-phrase decreases as a result. Most often compressions involve a too-early emergence of recognizable rhetoric within the s-phrase. The most recognizable functional measures are m. 5, where strong metrical rhetoric initiates the second subphrase, and m. 7, which initiates the turnaround. A turnaround is the structural gap between the arrival of an m-phrase, typically on

functional m. 7 and the subsequent SPO, notably occurring in m. 31 of a thirty-two-measure song form (see p. 87).

Coming About 3:35 / m. 90 features traditional energy-gain turnaround rhetoric in its last two measures. After the m-phrase arrives in functional m. 4, a real-time listener expects the s-phrase to proceed into a second subphrase. However, Schneider instructs her band to “keep pushing” through the entirety of the phrase, an instruction reproduced above Figure 3.9a. As we realize that the last two measures are continuing to gain energy in a push into the SPO, we recognize them as a turnaround.



Figure 3.9 *Coming About* 3:35 / m. 90 as a turnaround-based compression

This s-phrase is missing two measures in relation to the norm; rather than assuming that the missing measures are simply deleted from the end as in an unfulfilled subphrase deviation, I read the s-phrase as missing functional mm. 5–6, identifying the emergence of turnaround rhetoric as functional m. 7. When a complete first subphrase is

followed by only two measures before the SPO, I assume that the deviation is an unfulfilled subphrase as a default unless turnaround rhetoric is clear.

Elision (coded 1, 23 s-phrases, 2%). In an *elision*, the arrival of an m-phrase precisely coincides with strong SPO rhetoric, resulting in a shortened s-phrase. This SPO rhetoric occurs earlier than expected and coincides with the final tone of a melodic motion.¹⁹ Thus, a new s-phrase begins at the moment that the melody of the previous s-phrase arrives. We expect an m-phrase to arrive within the boundaries of an s-phrase container, so the emergence of an SPO simultaneously with an m-phrase arrival is too early relative to the normative s-phrase.

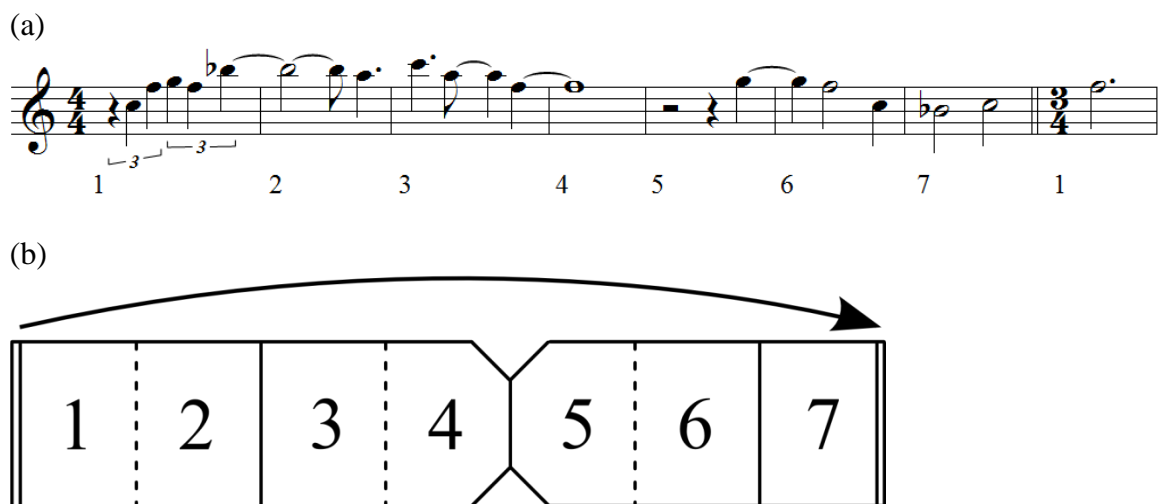


Figure 3.10 An elision at *Green Piece* 7:06 / m. 253

Figure 3.10 (above) schematizes an elision as it appears in Schneider's *Green Piece*: the arrow, representing the arrival of the m-phrase, corresponds with the double

¹⁹ Although I have defined the elision according to the terms developed in Chapter 2, my sense of the device is congruent with Lerdahl and Jackendoff's "left elision" in *Generative Theory*, 58.

barline, representing the SPO. In appearance, this device is similar to the unfulfilled subphrase. However, because its expressive effect is unique—the fusing of the end of one motion with the beginning of another—the elision warrants its own category.

Not uncommonly, an m-phrase arrival occurs on the downbeat of the ninth measure, coinciding with an SPO without causing the s-phrase to deviate in length in what I call a “faux elision.” The effect is similar to a proper elision deviation—the correspondence of an m-phrase arrival with SPO rhetoric—but I do not count this as a deviation because the s-phrase itself is normative. Faux elisions are common in subphrase deviations such as *Evanesence* 5:24 / m. 154.

Non-Isochronous Deviations (232, 12%)²⁰

Non-isochronous meters have pulses at inconsistent time intervals at some structural level. I include rubato under this category because its pulses are inconsistently timed at every structural level.

Deviational Mixed Meter (coded d, 143, 13%). Schneider makes extensive use of mixed meter, which I subdivide into three categories. In what I call *deviational mixed meter*, the most common deviation in the corpus, an s-phrase dialogues with a meter that is isochronous at every structural level (as in the standard meters of classical music), modifying it by adding or omitting a beat in an otherwise recognizable context. For example, the majority of “Hang Gliding” consists of cycles of eleven beats, with three measures of 3/4 followed by a measure of 2/4 (3+3+3+2). The measure of 2/4 disrupts a normative 3/4 context, omitting a beat from every fourth measure.

²⁰ This figure represents an s-phrase count so it excludes rubato. Including rubato and considered by absolute time, this category accounts for 85:13, which is 33% of the corpus.

Free Meter (coded f, 45 s-phrases, 4%). As a distinct approach to mixed meter that I classify in a separate category, Schneider also often composes in what I call “free meter,” deliberately eschewing metrical organization. In a passage of *free meter*, rhythmic groupings of unpredictably changing spans guide the rhythmic flow, frustrating the periodicity required for entrainment. Schneider ascribes a feeling of dance to the resulting expressive effect:

A lot of times I’ll write my ideas and then I have to figure out how to bar it after that, and so something like *Evanescence* has some different bars in there, or *Last Season*—there’s just some multi-metered things. It may be eight bars but within that there’s multi meter or something here and there, a little 3/8 or 3/4 mixed with 4/4, or something that makes it dance along a little better.²¹

In passages of free meter, consistent entrainment is likely impossible without memorizing the passages or following along with a visual aid; hypermeter does not accumulate since it depends on lower levels of entrainment. However, even without entrainment, patterns of acoustic gestalts permit the ongoing, contextually-based determination of metrical qualia, and a sense of locality within each s-phrase emerges even without entrainable structures. For example, although every s-phrase in *Aires de Lando* uses freely mixed meter without exception, an unambiguous sense of structural phrase nonetheless emerges. In the absence of hypermeter to guide expectations, this piece employs particularly clear SPO rhetoric at each new s-phrase.

Misleading Metrical Cues (coded m, 40, 4%). Even in contexts notated with consistent meter, Schneider sometimes disguises metrical cues through syncopation in voices that typically function to clarify meter, avoiding correspondence between tones with strong acoustic gestalts and beats with strong qualia. During the saxophone solo in

²¹ Personal communication, June 9, 2015.

Journey Home, for example, Schneider composes a texture that obscures the perceptibility of the notated 4/4 meter through extensive syncopation in the bassline, which typically serves a meter clarifying function. In listening to the recording while reading the score, the meter is unambiguous, and the musicians share a common mental construction of the s-phrase since they are reading parts that indicate meter. However, according to the acoustic signal alone, the absence of the typical coordination between acoustic gestalts and qualia in the bass obscures the meter's regularity.

Rubato (coded r, 36:27, 14%). *Rubato* passages, accounting for the largest portion of absolute time for any category other than the normative s-phrase (54%), involve the expressive manipulation of tempo. Where regular meter has isochronous (equally timed) pulses at two or more levels and mixed meter typically has an isochronous pulse at one level, rubato playing avoids isochrony at every pulse level. Schneider calls for rubato in numerous guises, many of which are drawn from well-established styles. Performance practice of piano music—notably that of the romantic era or cocktail style—involves liberal rubato. Chorale-style passages involve the pushing and pulling of tempo, often with a characteristic ritardando and fermata at the end of an m-phrase.

Schneider often composes a series of chords to be cued in performance without deference to an established tempo. She also commonly transitions between sections by decaying the sense of meter through a dramatic ritardando. In another technique that sometimes organizes expansive sections of a composition, various musicians simultaneously improvise according to their own independent rhythm in a contrapuntal texture with no rhythmic correspondence between voices. The present study goes little

further than to identify rubato as an important deviational device in Schneider's music. However, as a centrally important aspect of Schneider's style that she artfully integrates into many compositions, her oeuvre would be a fruitful locus for a deeper study of rubato in future research.

Conclusion

Chapter 3 has established through a corpus study that the normative s-phrase, as described in Chapter 2, occupies the majority of Schneider's repertoire, whether calculated through a count of s-phrases or the totaling of absolute time. It has explicated definitions for twelve deviational types. Finally, it has found that the normative s-phrase's influence supersedes its literal appearance on the surface of an acoustic signal through its function as a conceptual background for nine dialogic deviations.

Chapter 4: Form in the Corpus

Chapter 4 addresses form in Schneider’s compositions. It begins with an overview of her formal approach, framing it in relation both to traditional big band arranging and to sonata form practice. After establishing a tendency for a three-Space design at the highest structural level, it describes seven types of lower-level sections, differentiated by their function, as well as three “formal division criteria” that specify how these sections signal divisions between units at a deeper level, which I call “three-Spaces.” Based on these criteria, it summarizes the forms within the corpus, providing interpretive readings of three pieces that dialogically deviate from Schneider’s normative formal practice. Following this overview of form, I analyze *Hang Gliding* in depth, considering how harmony, rhythm, orchestration, dynamics, and thematic transformation interact in context.

Part I: Schneider’s Formal Practices

Overview

Figure 4.1, adopted from Gary Lindsay, diagrams the prototypical overall form of a big band arrangement.¹

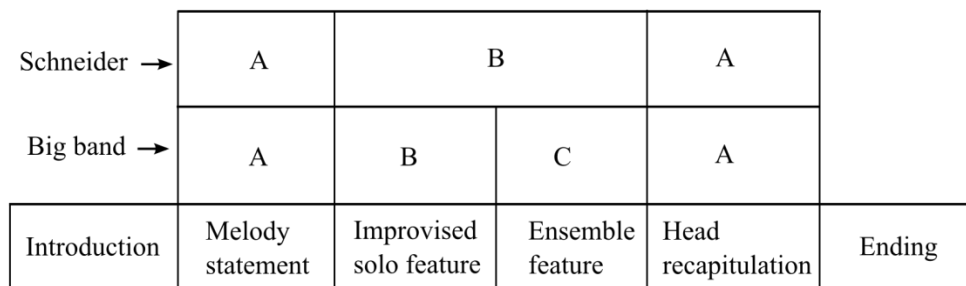


Figure 4.1 Typical overall form for traditional jazz arranging

¹ Lindsay, *Modern Jazz Arranging*, 111.

The bottom row of boxes presents typical sectional labels. Lindsay labels the overall form according to the alphabetical formal labels in the middle row of the figure, labeled “big band.”² The improvised solo feature typically realizes the scheme, often through multiple repetitions, and arrangers normatively compose background figures in the horn section to accompany the soloist. A piece often climaxes at the ensemble feature, or “shout chorus,” which demonstrates the ensemble’s virtuosity through the “high chops” of the lead trumpet player, the drummer’s skill in driving the ensemble, and the fast flourishes of the saxophone section.

Rather than cutting off the soloist before the ensemble feature, Schneider often integrates the solo and ensemble features into a single formal space, thereby altering the overall form. Where the prototype is schematized above as ABCA (in the middle row), Schneider integrates B and C for a *three-Space* conception, ABA (shown in the top row).³ I find it most natural to use the terminology of *Exposition Space*, *Solo Space*, and *Recapitulation Space* to describe Schneider’s large-scale designs.

The terms exposition and recapitulation imply a connection to sonata form. To be clear, Schneider’s pieces are decidedly not “in sonata form.” Writers from the eighteenth to twenty-first centuries have characterized the generic expectations for sonata form movements in great detail, and no single piece in the corpus follows these expectations exactly. Even though sonata terminology comes loaded with particular expectations, some of these terms seem to be natural descriptors for Schneider’s music. The notion of a large-scale form with three Spaces—the first introducing one or more themes, the second

² I have omitted Lindsay’s label of the “ending” section as A1.

³ While most of Schneider’s pieces are more accurately schematized as ABA’, ABA (without a “prime” indication) is meant to interact with Lindsay’s schema, which does not include a “prime.”

developing them (through solos and backgrounds), and the third bringing them back—resonates well with a broad sense of how a sonata form is shaped.

Schneider’s formal approach is best categorized as a hybrid of the big band arrangement prototype and sonata form, each of which captures different aspects of the music. Sonata form terminology recognizes her motivic–thematic emphasis, the free unfolding of her sections’ internal organization, and over-arching three-part design. Big band terminology emphasizes the importance of Solo Spaces within her style. Further, her typical preparation of Recapitulation Space through solo backgrounds with a shout-chorus-style climax is clearly a product of the jazz tradition. As an informed musician in the twenty-first century, Schneider certainly has access to both conceptions.

Schneider often divides the three-Spaces of her large-scale forms—Exposition, Solo, and Recapitulation—into smaller *sections*, which I differentiate according to function in a sense resonant with William Caplin’s *Classical Form*—the manner in which a *section* fits into and contributes to a piece’s form.⁴ Each of these three-Spaces has a like-named corresponding section. For example, all Exposition Spaces in the corpus include one or more sections with expositional function, but some additionally include sections with introduction or transition functions. Thus “Exposition Space” and “expositional section” have different meanings, as Spaces refer to a higher structural level than sections.⁵ “Soloistic sections” and “recapitulative sections” are likewise lower-

⁴ Caplin, *Classical Form*, 9.

⁵ Space labels are capitalized (e.g., Solo Space) while section labels are lowercase (e.g., soloistic section). For the three root words applied as labels for both Spaces and sections, I use noun forms for Spaces (Exposition, Solo, Recapitulation) and adjectival forms for sections (expositional, soloistic, recapitulative). For section types that do not overlap terminologically with Spaces, I retain the typical noun forms (introduction, transition, ensemble feature, coda).

level sections that typically contribute to corresponding, higher-level Spaces—Solo Space and Recapitulation Space.

The corpus includes sections of seven different functions. Figure 4.2 diagrams the Space and section formal levels in *Last Season*, the only piece in the corpus that happens to include exactly one section of each type. As discussed above, three of the section types correspond to the three Spaces: “expositional,” “soloistic,” and “recapitulative.” In general, expositional and recapitulative sections are thematic: *expositional* sections introduce new themes, while *recapitulative* sections occur after a Solo Space and directly refer to themes from the Exposition Space. *Soloistic* sections usually involve passages featuring a soloist but also admit group improvisation. Schneider normatively composes background figures to support featured soloists, and these backgrounds do nothing to undermine a passage’s categorization as a soloistic section.

| | | | | | | | |
|---------|------------------|----------------------|-------------------|------------------|------------|------------------------|------|
| Spaces: | Exposition Space | | Solo Space | | | Recapitulation Space | |
| | introduction | expositional section | soloistic section | ensemble feature | transition | recapitulative section | coda |

Figure 4.2 Formal diagram of *Last Season*

An *introduction* section may precede the first expositional section and a *coda* section may succeed the final recapitulative section. The *transition* section is distinguished by its internal placement: it separates two other sections rather than occurring at the beginning or end of the entire piece.⁶ The corpus includes only three

⁶ The term “transition,” as used here, is unrelated to the sonata form transition’s particular meaning.

examples of the *ensemble feature* (or shout chorus) section, which occurs when a soloist drops out as the ensemble executes a texturally distinct passage, usually climactic, that is not thematic in function.

Schneider's forms diverge from the big band arranging prototype shown above in Figure 4.1 in three significant ways. First, her background figures within the Solo Space enhance the trajectory of a work through their integration with the traditional ensemble feature. Many composers score background horn parts to support a soloist and add interest to an arrangement, but it is a hallmark of Schneider's style that such backgrounds integrally propel the piece's formal progress.

In fifteen of the corpus's twenty-four pieces, the momentum of the soloistic section leads directly to the Recapitulation Space. Of those pieces, thirteen climax at the end of the Solo Space—this is by far the first-level default—while two (*Evanescence* and *Pas de Deux*) decay in intensity to prepare an understated Recapitulation Space. Three pieces have a more traditional shout chorus (i.e., without a continuing solo) between the last soloistic section and the first recapitulative section, and four others have a transition between the last soloistic section and the first recapitulative section.⁷ Six of the nine pieces that lack this direct trajectory from Solo Space to Recapitulation Space occur on Schneider's first two studio albums, and the three more recent examples involve more complex formal maneuvering: as her style has matured, Schneider has apparently become more committed to the practice, now normative in her style, of carrying the listener into the Recapitulation Space through background figures at the end of the Solo Space.

⁷ *Last Season*, *Coming About*, and *Waxwing* have shout choruses; *Gumba Blue*, *Dance You Monster*, *El Viento*, and *Cerulean Skies* have intervening transitions; *Dissolution* has no Solo Space or Recapitulation Space; and the solo in *The Pretty Road* decays into a rubato section rather than climaxing at its culmination.

A second way that Schneider diverges from the formal prototype is that each section may unfold, with substantial freedom in its internal design, through the accumulation of structural phrases (s-phrases); her sections usually do not conform to a scheme.⁸ This flexibility in formal design enhances her control of each piece's trajectory on a finer scale since she is not beholden to the prescribed order or proportions of a fixed scheme. Her freedom from fixed schemes also gives her leeway to compose sections with expansive proportions. Schneider's composed melodies often feel more like themes, in the classical sense, than heads, in the jazz sense. In an approach that would be hindered by the constraints of a fixed scheme, Schneider's melodic usage often resonates with Schoenberg's principle of "developing variations."⁹ As I will demonstrate in the analysis of *Hang Gliding*, below, Schneider often repeats the same basic melody over a significant span, altering it in each iteration for a sense of continual change.

A third divergence from the formal prototype of big band arranging is Schneider's liberal use of transition sections to highlight formal boundaries. By composing a short, contrasting passage, Schneider calls the listener's attention to the division between larger sections; this attentional strategy plays a particularly important role in her music in the absence of the fixed schemes that typically guide listeners' comprehension of formal divisions in jazz. Transition sections also contribute to Schneider's control of a piece's trajectory, allowing her to dissipate or surge in intensity to prepare the appropriate mood for the subsequent section. Transition sections may link sections of differing function—expositional to soloistic, or soloistic to recapitulative. They also occur internally, within a

⁸ For exceptions, see *Waxwing* and *Dança Illusoria*, which do realize fixed schemes for their entireties.

⁹ Arnold Schoenberg, *The Fundamentals of Musical Composition* (New York: St. Martin's Press, 1967), 8.

single formal Space, to distinguish between two thematic ideas or to call attention to the end of one solo and the beginning of the next.

Form in the Corpus

Three *formal division criteria* create a meaningful framework for the interpretation of each piece's large-scale, three-Space form:

1. Each piece begins with Exposition Space.
2. The initiation of Solo Space coincides with the beginning of the first passage that features a soloist and abandons expositional function, i.e., the presentation of new themes.
3. Recapitulation Space begins at the onset of the first passage with recapitulative function, i.e., the return of thematic materials from the Exposition Space.

Despite their simplicity, these criteria provide an analytical framework that accounts for vast flexibility of normative form while responding meaningfully to formal deviations.¹⁰

For example, they instruct us that a transition between expositional and soloistic sections belongs to Exposition Space since the soloist has not yet begun, and that the emergence within a Solo Space of recapitulative function in the horns initiates the Recapitulation Space even if the soloist continues. The plans of lower-level sections and higher-level Spaces reflect *order* rather than the *proportions*; for example, an Exposition Space may include multiple units with expositional function over an expansive timespan, but I count it as a single expositional section if no other section of differing function intervenes.

¹⁰ I am indebted to James Hepokoski and Warren Darcy for the conceptual framework applied here. These authors describe the work of the composer as “the task of creating an engaging musical pathway through pre-established, generically obligatory stations,” requiring that “audible goals be successively articulated and secured.” In many ways the present theory echoes their establishment of audible formal signposts that, when undermined, beg hermeneutical interpretation. Hepokoski and Darcy, *Elements of Sonata Theory*, 9.

Table 4.1 tallies the distinct sectional designs that occur within Exposition, Solo, and Recapitulation Spaces within the corpus according to the seven sectional labels listed in the key to the left. The corpus includes four different Exposition Space designs. An introduction section (i) precedes the first expositional section (e) in sixteen of the corpus's twenty-four pieces. Two Exposition Spaces include an internal transition section (t), helping the listener recognize the boundary between two distinct parts within a single Space, while three feature a transition leading into the subsequent Solo Space. It is formal division criterion number two that instructs us that a transition section located between expositional and soloistic sections belong to Exposition Space; as a result, Solo Spaces cannot begin with a transition.

Table 4.1 Functional designs of formal Spaces

| Key | Expositions | | Solos | | Recapitulations | |
|------------------------------------|-------------|----|-------|----|-----------------|----|
| i: introduction | ie | 11 | s | 11 | rc | 18 |
| e: expositional | e | 8 | st | 3 | r | 3 |
| t: transitional | iet | 3 | sts | 4 | rsrc | 2 |
| s: soloistic | iete | 2 | sf | 1 | | |
| f: ensemble feature (shout chorus) | | | sft | 1 | | |
| r: recapitulative | | | ststf | 1 | | |
| c: coda | | | se | 1 | | |
| | | | stes | 1 | | |

Of the three types of Spaces, Solo Spaces are the most internally variable, with eight distinct sectional designs. The most common design for Solo Spaces consists of only a soloistic section (s), but many also include transition sections between different featured soloists or before the Recapitulation Space. Three Solo Space designs include the ensemble feature section (f): I read the ensemble feature as a continuation of the Solo

Space rather than the beginning of the Recapitulation Space. In two cases an expositional section occurs after a soloistic section has already occurred, indicating that the section is thematic in function yet does not refer directly to materials from the Exposition Space. Such a late emergence of new melodic materials is strongly deviational and demands further interpretation, addressed below.

Each Recapitulation Space design consists of at least one recapitulative section (r), and twenty of the corpus's pieces end with a coda (c). Like the too-late expositional section within Solo Space, the too-late return of a soloist within Recapitulation Space is deviational and will be addressed below.

Table 4.2 describes the sectional makeup of every piece in the corpus. The sixteen distinct designs are roughly ordered from simple to complex; notice that the pieces' copyright dates do not correspond to this ordering: Schneider's formal designs have not followed a chronological trajectory of simplicity to complexity. Only *Pas de Deux* consists of the three Spaces' corresponding section types without further adornment, schematized as esr (expositional–soloistic–recapitulative). Four pieces, nos. 2–5, decorate this basic rubric by adding a coda (esrc); nos. 6–8 further add an introduction (iesrc), and nos. 9–12 add a transition between two soloists within Solo Space (iestsrc). Pieces no. 13–17 vary these basic designs through variously placed transitions. *Waxwing* and *Coming About* lead to the Recapitulation Space through an ensemble feature, as does *Last Season*, which additionally includes a transition between the ensemble feature and Recapitulation Space.

Table 4.2 Forms in the corpus

| | Piece | Copyright | Exposition | Solo | Recapitulation |
|----|-------------------------------|-----------|------------|-------------|----------------|
| 1 | <i>Pas de Deux</i> | 2001 | e | s | r |
| 2 | <i>Allegresse</i> | 1997 | e | s | rc |
| 3 | <i>The “Pretty” Road</i> | 2007 | | | |
| 4 | <i>Aires de Lando</i> | 2006 | | | |
| 5 | <i>Sky Blue</i> | 2004 | | | |
| 6 | <i>Evanescence</i> | 1991 | ie | s | rc |
| 7 | <i>Journey Home</i> | 1999 | | | |
| 8 | <i>Dança Illusória</i> | 2001 | | | |
| 9 | <i>Wyrgly</i> | 1989 | ie | sts | rc |
| 10 | <i>Gumba Blue</i> | 1984 | | | |
| 11 | <i>Green Piece</i> | 1987 | | | |
| 12 | <i>Night Watchmen</i> | 1996 | | | |
| 13 | <i>Bombshelter Beast</i> | 1995 | iet | s | r |
| 14 | <i>Hang Gliding</i> | 1999 | iet | s | rc |
| 15 | <i>Dance You Monster</i> | 1991 | iet | st | r |
| 16 | <i>El Viento</i> | 1994 | e | st | rc |
| 17 | <i>Concert in the Garden</i> | 2004 | iete | s | rc |
| 18 | <i>Waxwing</i> | 1993 | ie | sf | rc |
| 19 | <i>Coming About</i> | 1995 | ie | ststf | rc |
| 20 | <i>Last Season</i> | 1985 | ie | sft | rc |
| 21 | <i>Cerulean Skies</i> | 2007 | ie | st | <i>rsrc</i> |
| 22 | <i>Bulería, Soleá y Rumba</i> | 2004 | iete | <i>stes</i> | rc |
| 23 | <i>Choro Dançado</i> | 2001 | e | <i>se</i> | <i>rsrc</i> |
| 24 | <i>Dissolution</i> | 1998 | e | -- | -- |

Pieces nos. 21–24 demand special interpretive consideration; I will begin by discussing *Dissolution*. As a score composed to accompany the modern dance troupe, Pilobolus, *Dissolution*’s melodic materials continue even when soloists are featured, perhaps to provide the dancers with consistently recognizable content with which to coordinate. Therefore, formal division criterion number two—that the onset of a solo feature in the absence of expositional function signals the Solo Space—never occurs. Instead, the piece cycles melodic materials through a series of textural settings, evolving

in mood over the piece's entirety. It would seem arbitrary to assign divisions between Spaces as in the large three-Space paradigm. The summary of forms in Table 4.2, above, indicates therefore that *Dissolution* includes only an expositional section. More precisely, however, this piece resists the norms of the rest of the corpus and does not respond well to the three-Space division criteria; in fact, it would best be described as being freely "through composed."

In *Cerulean*, *Bulería*, and *Choro*, an expositional or soloistic section returns after its corresponding Space has culminated according to the formal division criteria. In particular, *Bulería* reverts to an expositional section after the onset of the Solo Space, *Cerulean* reverts to a soloistic section after the onset of the Recapitulation Space, and *Choro* involves both of these deviations. In all three pieces the Solo Space comes to an apparent conclusion in a rubato passage. Consistency of pulse is one of the most important aspects of forward-directed trajectory, and rubato undermines Schneider's tendency to establish such a trajectory as Solo Space leads to Recapitulation Space. In all three cases, the too-late resuscitation of an expositional or soloistic section after its associated Space has ended corrects this initial formal problem on the second attempt.¹¹

What follows is a hermeneutical reading of these three deviational pieces, examining how their divergences from formal expectation introduce drama into the music. Table 4.3 outlines the form of each piece starting from its first soloistic section. It will prove useful to begin by discussing *Cerulean* and *Bulería* and return to *Choro* later. The first two rows describe, respectively, the initial in-time soloistic section and the

¹¹ The manner of explaining deviational forms through hermeneutical analysis applied in the following analyses draws inspiration from Hepokoski and Darcy. See, for example, their discussion of the i–v harmonic plan in minor mode expositions, Hepokoski and Darcy, *Elements of Sonata Theory*, 315.

rubato that undermines its trajectory in a formal “disaster.” In a subsequent section, in the row labeled “call to action,” the music collects itself and takes a first step towards a recovery, preparing to move past the problem and towards a solution.¹² In *Cerulean* and *Bulería*, this call to action manifests as a rubato transition section.

Table 4.3 Hermeneutical readings of the Solo and Recapitulation Spaces of three deviational forms¹³

| | Hermeneutical Function | <i>Cerulean Skies</i> (strsrc) | <i>Bulería</i> (stesrc) | <i>Choro</i> (sersrc) |
|---|-------------------------------|--|---|---|
| 1 | In-time Solo Feature | Saxophone, 4:26 / m. 76 (s) | Saxophone, 5:25 / m. 113 (s) | Saxophone, 2:16 / m. 88 (s) |
| 2 | Undermined trajectory | Rubato accordion solo, 8:49 / m. 145 (s continues) | Pulse decays to rubato, 9:57 / m. 198 (s continues) | Pulse decays in final s-phrase, 5:17 / m. 184 (s continues) |
| 3 | Call to action | Piano transition, 12:18 / m. 185 (t) | Rubato transition, 10:53 / m. 206 (t) | Expositional=>soloistic 5:40 / m. 197 (e) |
| 4 | Problematized Recapitulation | Rubato chorales, 13:01 / m. 195 (r) | Expositional function, 11:19 / m. 207 (e) | Inverted theme, 6:50 / m. 237 (r) |
| 5 | In-time Solo Feature | Saxophone, 17:40 / m. 300 (s) | Flugelhorn, 13:56 / m. 307 (s) | Saxophone, 7:32 / m. 261 (s) |
| 6 | Corrected Recapitulation | 19:32 / m. 348 (r & c) | 16:00 / m. 372 (r & c) | 7:59 / m. 277 (r) |

Cerulean and *Bulería* are the second and third longest pieces in the corpus (following *Dissolution*); in relation to the rest of the repertoire, their solo spaces are developed enough in both formal progress and absolute time that all signs point to an imminent Recapitulation Space. The composed nature of these rubato transitions seems to further suggest an abandonment of improvisation in approach to the Recapitulation

¹² Fred Maus outlines a “scheme of explanation or interpretation” that “works by identifying certain *events* as *actions* and offering a distinctive kind of *explanation* for those events. The explanations ascribe sets of psychological states to an agent” (italics in original). Fred Maus, “Music as Drama,” in *Music and Meaning*, ed. Jenefer Robinson (Ithaca and London: Cornell University Press, 1997), 119.

¹³ Bold lines indicate the boundary between Solo Space and Recapitulation Space.

Space. At this juncture (labeled in the table's fourth row as the "Problematized Recapitulation") the two pieces take drastically different dramatic turns. Neither piece's ensuing section, however, is satisfyingly recapitulative in function.

In *Cerulean*, the "problematized recapitulation" returns to the main melodic materials from the Exposition Space. This initiates the Recapitulation Space according to formal division criterion number three, but not comfortably: the rubato still refuses to gather a steady pulse, and the theme seems lost and introverted, albeit poignant. It repeats over and over, as if to urge itself forward. Of the corpus's pieces with in-time Exposition Spaces, this is the only Recapitulation Space with such a timid bearing; it stands no chance of balancing the Exposition's vitality.

The drums finally reenter at 15:16 / m. 237, managing to attain a steady tempo and leading to an opportunity for an in-time restatement of the theme from the Exposition Space. But the formal problem is still not fully resolved: this thematic return has not been preceded by a soloistic section. Finally, at 17:40 / m. 300 (marked in the table's fifth row) an earnest soloistic section emerges, laden with the experience of its past adversity. This soloistic section is too late, occurring after the Recapitulation Space has already begun. It is a second chance to enter a recapitulative section carried by the momentum of a solo; this time the solo successfully prepares the subsequent recapitulative section, as noted in the table's final row, "Corrected Recapitulation."

As in *Cerulean*, *Bulería*'s momentum stalls in a rubato passage at the end of a featured solo. In contrast to the understated recapitulative section in *Cerulean*, however, the third and fourth rows in Table 4.3 (above) indicate that the ensuing transition section leads to the reemergence of steady pulse. Beginning at 11:19 / m. 207, this section is

clearly thematic, suggesting the onset of Recapitulation Space since we have already heard a featured soloist. But the function of this thematic section does not seem to be recapitulative: it feels like a new beginning rather than an arrival, and its connection to the theme from the Exposition Space is opaque. I therefore consider this section to be expositional in function. Like the soloistic section in Recapitulation Space of *Cerulean*, this expositional section's placement in the Solo Space is too late, this time based on formal division criterion number two.

This expositional section is expansive. The numerous restatements of its melody gradually become more elaborate, densely orchestrated, and dynamically intense; each statement gains energy as it modulates in an ascending minor third key cycle. As shown in row 5, 13:56 / m. 307 begins a new, in-tempo soloistic section, which manages this time to establish a consistent trajectory into the Recapitulation Space. In the second opportunity to prepare the Recapitulation Space through a soloistic section's momentum, the form overcomes the problem manifested by the first soloistic section's rubato culmination.

The expositional section in the "problematized recapitulation" feels like a focal point of *Bulería*'s overall form despite its too-late occurrence in the Solo Space. In a sense, a normative esrc form starting from the too-late expositional section is nested into the piece's last seven minutes after a tumultuous beginning. The piece as a whole could be schematized as ietest(esrc), where these last seven minutes are parenthesized to show their internal formal completeness. Through the extensive development of the piece's themes and moods, the first eleven minutes of the piece prepare us for this second chance

at an Exposition Space. To my ear, the depth of preparation for this too-late expositional section makes it one of the most beautiful passages in the corpus.

Like *Cerulean* and *Bulería*, *Choro Dançado*'s Solo–Recapitulation trajectory is undermined by a decay in its regular tempo after its first soloistic section, as shown in rows 1–2 in Table 4.3, above. *Cerulean* and *Bulería* follow this formal problem with calls to action in the form of rubato transition sections, but *Choro*'s “call to action” is less hesitant. Instead of a gentle emergence from “disaster,” the tempo leaps back into action immediately at 5:40 / m. 197, shown in the table's third row. In an attempt to overcome this formal setback by surging into the Recapitulation Space, a previously unheard melody emerges. As in *Bulería* I label this section as a too-late expositional section because its content is new rather than referential to the Exposition Space.

This relatively short section is decorated by an improvised piano solo, flavoring the section as a hybrid between soloistic and expositional functions. Rather than leading to a climax as in a soloistic section preparing a Recapitulation Space, the soloist drops out and the texture merges smoothly into a new section, at 6:50 / m. 237, listed in row four as the “problematized recapitulation.” Here the rightful theme gradually emerges, initially disguised through inversion into an ascending line before returning to its original descending contour in the subsequent s-phrase at 7:04 / m. 245.

Owing to the smooth trajectory from the expositional/soloistic hybrid to the disguised recapitulative section, we realize only retrospectively that we have already entered the Recapitulation Space. This recapitulative section satisfies formal division criterion three to initiate the Recapitulation Space, yet it lacks the comprehensible thematic return that typically occurs at this juncture. The Solo Space has yielded to the

Recapitulation Space with no clearly perceptible cue: we have walked from one room to the next without noticing the doorway.

Such smooth growth from soloistic to recapitulative function defies two norms: to climax at the end of the Solo Space in preparation for Recapitulation Space and to mark the Recapitulation Space's onset with a clear melodic return. As a subsequent corrective to these deviations, the saxophone soloist returns for a second soloistic section at 7:32 / m. 261 in what feels like a last-ditch effort. Finally, this particularly short, intense soloistic section leads definitively to a recapitulative section at 7:59 / m. 277, shown in the table's sixth row, to rectify the prior formal problem.

Cerulean Skies, *Bulería*, *Choro Dançado*, and *Dissolution* are the only four structures that directly challenge the paradigm established by the three formal division criteria. That twenty of the twenty-four pieces in this corpus follow these relatively straightforward expectations suggests a certain consistency in Schneider's formal practice. The examination of precisely how these problematized forms rub against our expectations based on the formal division criteria has suggested possible hermeneutical readings of these deviational pieces.

Part II: An Analysis of *Hang Gliding*

Part II of Chapter 4 analyzes *Hang Gliding*, considering the interaction of phrase rhythm with other parameters including melody, harmony, orchestration, and dynamics. My analysis relies on cross-domain mapping—the understanding of one domain, such as

music, through metaphorical comparison with another domain.¹⁴ In particular, I consider the music in terms of the domains of embodied motion and human emotion, as suggested by Schneider's liner notes: "*Hang Gliding* is entirely about movement, an impression of my experience of hang gliding in Rio de Janeiro: the suspension, grace, lift, and acceleration accompanied by the rush of apprehension and exhilaration."¹⁵ The merit of this expressive analytical approach is that the explication of cross-domain mappings communicates an aspect of the music that is unavailable through structural (i.e., non-expressive) analysis alone yet nonetheless crucial to an account of the piece.¹⁶

The Exposition Space in *Hang Gliding* creates a continually forward-directed trajectory through ongoing growth in dynamic intensity and orchestral density. Its melodic content consists of multiple iterations of a harmonic-melodic paradigm, along with intermittent passages of contrasting material. Four iterations of the paradigm comprise the majority of the Exposition Space, and two more iterations occur in the Recapitulation Space. Each iteration of the paradigm consists of a simple harmonic cell, IV–I⁶–vi, and its elaborated repetition.

As we experience one chord after the next, the design of this IV–I⁶–vi progression mirrors the broad emotional swings expected of a first-time hang glider. IV, with its predominant function, inherently points forward in the expectation it creates for dominant function: it has the potential energy of a body floating in air. Rather than resolving to the

¹⁴ For a discussion of "cross-domain mapping," see Lawrence Zbikowski, "Metaphor and Music," in *The Cambridge Handbook on Metaphor*, ed. Ray Gibbs, Jr. (Cambridge: Cambridge University Press, 2008), 511ff.

¹⁵ Maria Schneider, Liner Notes, *Allégresse*, Maria Schneider Orchestra ArtistShare 0005, 2000, compact disc.

¹⁶ Maus likewise notes a dichotomy between structural and expressive modes of analysis. "Music as Drama," 107.

dominant, IV resolves instead to I^6 , whose inversion prevents it from being completely grounded despite its relative stability as a tonic chord. In contrast, vi provides the sort of “lift” Schneider describes in her liner notes, unsettlingly jolting away from the ground. Thus the cell’s tenuous resolution to I^6 is immediately undermined by vi.

Figure 4.3 presents a rhythmic reduction of the paradigm’s harmony. The basic harmony of the cell occupies the first measure of the paradigm. Its repetition, in the second measure, differs in two ways. First, a IV^6 prefix chord on beat 1 elaborates root position IV, displacing the latter to beat 2.¹⁷ Second, starting at the downbeat of m. 2, the repetition’s key is four semitones lower than the initial statement, symbolized as “(-4).” This unprepared, flat-side modulation to a distantly related key evokes the ground dropping out from beneath.



Figure 4.3 Rhythmic reduction of the paradigm’s harmony in *Hang Gliding*

The rhythmic reduction in this figure is influenced by an analytical technique proposed by Carl Schachter in his reduction of relatively deep hypermetrical levels by representing them in a proportionally smaller notation, as local meter.¹⁸ In the Exposition Space, Schneider realizes the cell by expanding each of the sixteen eighth notes in Figure 4.3 into a full measure. The resulting sixteen measures occur over the span of two s-

¹⁷ For more on the “prefix chord,” see Strunk, “The Harmony of Early Bebop,” 7.

¹⁸ Carl Schachter, “Durational Reduction,” in *Unfoldings: Essays in Schenkerian Theory and Analysis*, ed. Joseph N. Straus (Oxford: Oxford University Press, 1999), 58.

phrases. The paradigm's iterations in the Recapitulation Space take twice as many measures to realize as those in the Exposition Space such that each eighth note expands into the span of *two* measures, and these iterations therefore occupy four s-phrases.

Notably, it is the functional measure cycle, rather than the harmonic functional cycle (T-PD-D-T) or thematic concerns, that dictates phrase division. *Hang Gliding* has no perfect authentic cadence (PAC) or half cadence (HC); according to certain pitch-based approaches to phrase determination, it would therefore have no complete phrases—clearly an inappropriate reading of this piece.¹⁹

As the paradigm repeatedly emerges over the course of the piece, Schneider elaborates or varies its harmonies in several ways. For each beat as shown in Figure 4.3, above, I determine the harmony by comparing all of the paradigm's iterations and assigning the chord that appears on that beat more than any other chord. The purpose of this harmonic reduction, then, is not to reflect the background of any single statement per se (although four of the six iterations do reduce to this progression). Instead, it can be considered a distillation of the essential harmonic and melodic features into a basic configuration underlying *all* of the theme's iterations.²⁰

¹⁹ Although emanating from different analytical traditions, conceptions of “phrase” in both Hepokoski-Darcy and Rothstein depend on the presence and function of the cadence. Rothstein, *Phrase Rhythm*, 16ff.; Hepokoski and Darcy, *Elements of Sonata Theory*, 69n10.

²⁰ The paradigm's role in my analysis resonates with Arnold Schoenberg's concept of the Grundgestalt. “A Gestalt is marked by its characteristicness... A figure, in contrast is relatively uncharacteristic. *A Gestalt to which derived forms in a piece can be traced back is the Grundgestalt* (italics mine).” Patricia Carpenter and Severine Neff, Commentary to *The Musical Idea and the Logic, Technique, and Art of its Presentation*, by Arnold Schoenberg (Bloomington and Indianapolis: Indiana University Press, 2006), 27.

All but two exceptional iterations—one in the Exposition Space and another in the Recapitulation Space—express the basic progression at the beats indicated in the rhythmic reduction. Figure 4.4 presents the exceptional iteration in the Recapitulation Space, which recomposes the second half of the paradigm. This recomposition changes the paradigm’s expressive character: modal mixture colors I^6 on beat 3 of m. 2 as i^6 , and beat 4 returns to major I^6 instead of lurching away to vi . The exceptional iteration in the Exposition Space follows a similar procedure. In the entirety of *Hang Gliding*, this resolution to tonic is as close as the last harmonic event in an s-phrase ever gets to a traditional cadence until the coda; the ensuing discussion will note how Schneider uses this exceptional design strategically in the Recapitulation Space.



Figure 4.4 Exceptional version of the paradigm in *Hang Gliding*

Figure 4.5 adds the melody to the rhythmic reduction of the paradigm described above. As in the reduction of the harmonic progression, the melody’s reduction captures the features most common among the paradigm’s iterations. The melody unfolds as a chordal skip to $\hat{5}$, which prepares a suspension (marked “sus”). The retention of the melodic common tone on beat 1 of m. 2 evokes the smoothness of floating, an effect juxtaposed against the surprise of the modulation: the hang glider is left suspended, physically and musically, as the ground drops out from beneath. Reinterpreted as $\hat{7}$ in $C\flat$ after the modulation (shown with the symbol, “ \Rightarrow ,” which is read as “becomes”), the

$\hat{1}$ $\hat{5}$ \Rightarrow $\hat{7}$ $\hat{6}$ (P) $\hat{1}$

 Eb : IV I6 vi (-4) C: IV6 IV I6 vi

Just as the paradigm's pitch materials evoke dramatic swings between certainty and uncertainty, so does the metrical setting. At multiple structural levels, Schneider establishes stable metrical structures, only to deviate from them. Figure 4.6 notates a rhythmic pattern that begins in the introduction and repeats continuously throughout the Exposition Space. Its harmony begins on $A\flat$, which continues past the introduction to serve as the initial IV of the first paradigm. This chord's raised eleventh hints at a whimsical Lydian coloration, but I read it as a diatonic color tone decorating a local IV.²²

²² Henry Martin reads this chord as I in Ab Lydian, resulting in a drastically different harmonic interpretation of the piece than the account offered here. See Henry Martin, "Maria Schneider's *Hang Gliding*: Aspects of Structure," *Tijdschrift voor Muziektheorie* 8, no. 1 (February, 2003): 17–18.

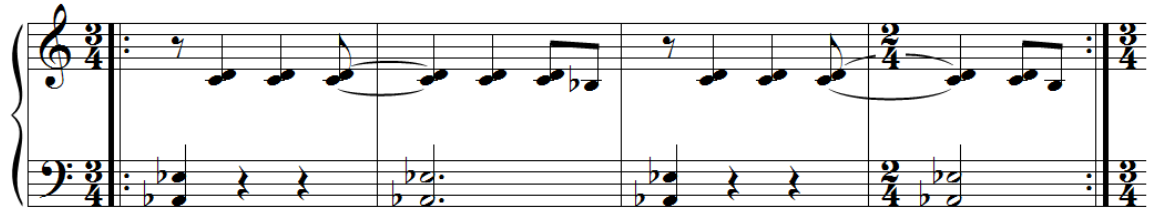


Figure 4.6 “Heartbeat” rhythmic pattern as in the introduction to *Hang Gliding*, 0:03 / mm. 1–4

This syncopated rhythmic figure evokes a beating heart, where the 2/4 measure is a heartbeat skipped in the thrill of flight.²³ This grouping of the quarter-note pulse level, 3–3–3–2, persists throughout the Exposition Space. The three consecutive 3/4 measures engender entrainment, so I read the dropped beat in the fourth measure of the sequence as a deviation—a deleted quarter note from an even set of twelve—rather than a uniquely rendered formulation of eleven beats. S-phrases with this metrical pattern therefore count in the corpus as deviational mixed meter rather than free meter.

The tempo on the studio recording of *Hang Gliding* is quarter note equals 156 bpm—slightly too fast to be a tactus according to London’s formulation (150 bpm is his fastest permissible tactus) and close to the boundary of the range for Lerdahl and Jackendoff (160 bpm). Hearing the quarter note as a subdivision and the dotted half note as the tactus is certainly possible, but the resulting tempo of 52 bpm registers at the other extreme, somewhat slow for a tactus. This tension creates a layer of ambiguity in the experience of listening to the recording. I would suggest that, in the real experience of listening to the piece, we drift back and forth between feeling these two pulse levels as tactus.

²³ McKinney characterizes the 2/4 measure as a “jump ahead” or, when accented during the saxophone solo, “falling.” Elizabeth McKinney, *Maria Schneider’s “Hang Gliding,”* 49.

For the sake of clarity in this analysis, I will refer to the quarter note as the tactus; it is certainly possible to choose that hearing, fast though it may be. Assuming a quarter-note tactus, it is the measure level that is non-isochronous, alternating a succession of three dotted half notes with a single half note. Despite the pattern's dropped beat, we continue to entrain to the meter since the cycles of qualia and functional measures persist.

In the Exposition Space Schneider adds pairs of held bars or empty bars after each of the paradigm's two s-phrases, creating yet another layer of instability (see Chapter 3, p. 92ff.). Each iteration is separated temporally from the next through contrasting passages (discussed below). These contrasting passages are not elaborated with additions. The instability of these additions is therefore felt in two layers: the deviations themselves and the unpredictability of their placement.

The 3–3–3–2 metrical pattern repeats continuously through the Exposition Space without deference to the addition deviations. In the absence of these deviations, we would continually hear the SPO at the same term within the metrical pattern because the eight-measure duration of two complete passes through the pattern (3–3–3–2, 3–3–3–2) corresponds to the eight functional measures of a normative s-phrase. Figure 4.7a illustrates this pattern, marking each SPO with an underscore.²⁴ But because addition deviations postpone the SPO, each pair of additions (marked E for “empty bars” in Figure 4.7) shifts the listener's orientation toward the metrical pattern as in Figure 4.7b. Rather than beginning at the first 3/4 measure in the pattern as in 3–3–3–2, the s-phrase now begins at the third 3/4 measure as in 3–2–3–3. It is not the pattern itself that changes, but instead our orientation towards it based on our perception of the SPO as a beginning.

²⁴ Compare to Table 4.4, below.

Each such shift in phase is neutralized through another pair of additions as shown in Figure 4.7c, returning our perception of the pattern to 3–3–3–2.

(b) E E
3 3 3 2,3 3 3 2,3 3, 3 2 3 3, 3 2 3 3, 3 2 3 3...

Figure 4.7 Perceptual orientation towards the 3–3–3–2 metrical pattern in *Hang Gliding*

Each iteration elaborates the paradigm's pitch structure differently. Various complete upper and lower neighbor tones decorate the prolongation of $\hat{1}$ in mm. 1–4 of each iteration; a double neighbor tone decorates $\hat{1}$ in Iteration 3. Instead of the unadorned consonant skip of a fifth in mm. 5–7 of Iteration 1, Iterations 2–4 include a melodic gesture sweeping down an octave before reversing itself to build upward momentum as it bursts past the tonic to $\hat{5}$. In each iteration the IV–I⁶–vi progression of the first cell occurs on functional mm. 1, 5, and 7, with slight exceptions: in Iterations 3 and 4, IV⁶ substitutes

(a) Iteration 1: 0:11 / m. 9-28

(b) Iteration 2, 0:42 / m. 37-56

(c) Iteration 3, 1:17 / m. 69-88

(d) Iteration 4, 2:12 / m. 140

Figure 4.8 Paradigm iterations in the Exposition of *Hang Gliding*

for IV as its inversion. In the second s-phrase of Iterations 2–4, a consonant skip and passing tone elaborate an anticipation of $\hat{6}$.

(a) Cadential figure, 0:33 / mm. 29–36

^6 ^5 ^4 ^3

A♭: iv ♭VII I

(b) Bass descent figure, 1:04 / mm. 57–68

^2 ^7 ^5 => ^7 ^1

D: V7sus IV I6 (-4) B♭: V7sus IV I6

(c) Bass ascent figure, 1:39 / mm. 89–104

^6 ^2 ^6 ^3

A: ii iii IV V6/V

97 ^1 ^5 ^2 ^6

P₄⁶ vi V6 II6

Figure 4.9 Contrasting passages in the Exposition Space of *Hang Gliding*

Three different passages of contrasting pitch materials intervene between iterations of the paradigm in the Exposition Space. Figure 4.9a (above) shows a cadential figure that occurs after Iterations 1 and 4. Octave coupling and neighbor tones decorate its stepwise descent from $\flat\hat{6}$ to $\hat{3}$, $F\flat-E\flat-D\flat-C$. The modally mixed iv is perhaps even more common in jazz than in the European common practice, and $\flat VII$ substitutes for it here.²⁵

Figure 4.9b illustrates a second contrasting passage, this one at 1:04 / m. 57. The harmony borrows part of the basic cell's IV–I⁶ progression, inserting V7sus before IV and omitting vi. This progression occurs twice over the span of a ternary s-phrase's three subphrases (see Chapter 3, pp. 91–92). As a result, its metrical setting shifts phase: at the measure level, V7sus has strong beat 1 qualia in the first pass while it has weaker beat 3 qualia on the repetition, recasting the chord as an anacrusis. As in the paradigm, this passage modulates down four semitones between the harmony's two passes, creating a stepwise bass descent, A–G–F \sharp –F–E \flat –D. The melody ascends an octave and a half in large skips from $\hat{2}$ to $\hat{5}$ (E to A). In another similarity to the main theme, the modulation reinterprets $\hat{5}$ as $\hat{7}$ (spelled in both occurrences as A); this time the line transfers registers rather than remaining in the same octave as a common tone.

A third contrasting passage, occurring at 1:39 / m. 89 and shown in Figure 4.9c, balances the stepwise bass descent of Figure 4.9b with a bass ascent. This bassline is diatonic save for the chromatic passing chord, V⁶/V. It is stepwise up to its penultimate chord, at which point it leaps down a perfect fourth from $\hat{7}$ to $\sharp\hat{4}$. Starting from the

²⁵ See Strunk, “The Harmony of Early Bebop,” 17. In bebop the $\flat VII$ chord typically has dominant quality, but the voice-leading here is comparable. See Strunk, “The Harmony of Early Bebop,” 17.

melodic $\hat{6}$ in the fifth measure, the melody alternates ascending perfect fifths with descending perfect fourths sequentially. This passage repeats with varied orchestration at 1:56 / m. 105.

Table 4.4 summarizes the formal layout of the Exposition Space. The “Melodic Content” column reveals that the paradigm’s two s-phrases appear contiguously in each iteration, but only Iterations 1 and 4 lead to the cadential figure. Each pair of additions, shown in the “Numerical Schema” column as “EE” or “HH,” shifts the position of the 2/4 measure within the pattern as discussed above and indicated in the “Meter” column.²⁶ The inconsistency of this metrical toggle switch imbues the Exposition Space with uncertainty—precisely the emotion one would expect of a first-time hang glider.

Table 4.4 Form of the Exposition Space in *Hang Gliding*

| Timestamp | Measure | Numerical Schema | Melodic Content | Meter |
|-----------|-----------|---------------------|--|----------------|
| 00:03 | 1 | 12345678 | Introduction | 3332, 3332 |
| 00:11 | 9 | 12345678EE | Paradigm Iteration 1 | 3332, 3332, 33 |
| 00:22 | | 12345678EE | | 3233, 3233, 32 |
| 00:33 | 29 | 12345678 | Cadential figure (4.9a) | 3332, 3332 |
| 00:42 | 37 | 12345678EE | Paradigm Iteration 2 | 3332, 3332, 33 |
| 00:53 | | 12345678HH | | 3233, 3233, 32 |
| 01:04 | 57 | 12345678abcd | Stepwise descent (4.9b) | 3332 x 3 |
| 01:17 | 69 | 12345678HH | Paradigm Iteration 3 | 3332, 3332, 33 |
| 01:28 | | 12345678HH | | 3233, 3233, 32 |
| 01:39 | 89 105 | 12345678 | Stepwise ascent (4.9c) (repetition) | 3332, 3332 |
| 01:47 | | 12345678 | | 3332, 3332 |
| 01:56 | | 12345678 | | 3332, 3332 |
| 02:04 | | 12345678 | | 3332, 3332 |
| 02:12 | 121 | 12345678HH | Paradigm Iteration 4 / Theme | 3332, 3332, 33 |
| 02:23 | | 12345678HH | | 3233, 3233, 32 |
| 02:33 | 141 | 1234 (faux elision) | Cadential figure (4.9a) | 3332 |

²⁶ As defined in Chapter 3, p. 93 ff., “H” symbolizes “held bars” and “E” symbolizes “empty bars”; both are phrase rhythmic deviations under the category of “additions.”

As the Exposition Space progresses, the orchestration gradually becomes more dense and the melody's articulation shifts from what Martin calls a "pointillistic" texture to a more lush setting.²⁷ Symptomatically, the addition deviations initially manifest as empty bars but shift to held bars in Iteration 2 as the horns begin to sustain their tones of arrival. A steady increase in intensity creates a trajectory to Iteration 4. In sum, this Exposition Space carries out a continual forward motion that arrives definitively at this final paradigm iteration—the bona fide theme. I read the Exposition Space as a transformation in musical mood from timidity to confidence through the melodic paradigm's multiple attempts at hang gliding; the theme's placement at the end of the Exposition Space represents the achievement of a first successful flight.

After the Exposition Space completes its trajectory at the theme's arrival, it immediately prepares the onset of the Solo Space through a drastic drop in intensity.²⁸ Greg Gisbert adumbrates his upcoming flugelhorn solo with the cadential figure, this time truncated into a subphrase deviation with a faux elision as shown in Figure 4.10 (see Chapter 3, p. 103). The melody and harmonic progression arrive at the s-phrase's fifth measure, which we hear as a new functional m. 1 based on unambiguous SPO rhetoric.

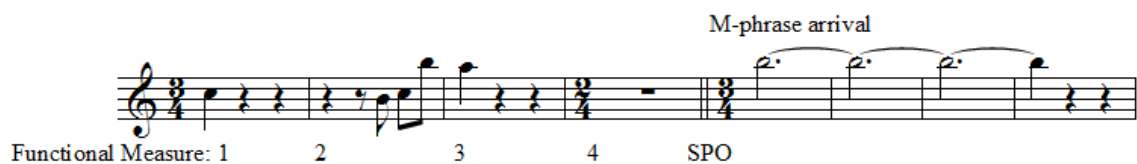


Figure 4.10 Cadential figure with faux elision into the Solo Space to *Hang Gliding*

²⁷ Martin, "Maria Schneider's *Hang Gliding*": 19.

²⁸ The phrase-by-phrase spreadsheet for *Hang Gliding* in the linked [Excel file](#) may be a useful reference for the remainder of this analysis.

Schneider frequently uses deviational s-phrase designs to audibly signal the onset of a new section; this faux elision marks a transition, one s-phrase in duration, which prepares the Solo Space. Four factors contribute to the audibility of this transition section's onset, the first two of which are mentioned above: (1) the faux elision, (2) the piece's first instance of a non-doubled melody, (3) a shift in rhythm section's groove, and (4) the replacement of the 3–3–3–2 metrical pattern with consistent 3/4 meter. These changes collectively signal a transition section, the inclusion of which suggests the possibility that Solo Space will begin, and the subsequent continuation of Gisbert's solo flugelhorn confirms the onset of Solo Space.

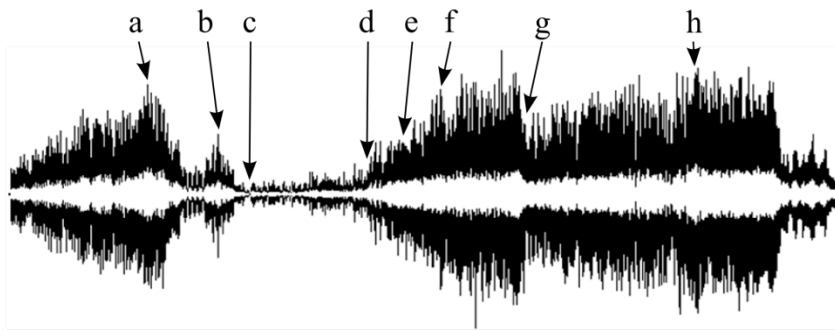


Figure 4.11 Waveform of *Hang Gliding*

Figure 4.11 (above), a waveform of *Hang Gliding*, provides a visual impression of the recording's dynamic profile (much of the ensuing discussion refers to this figure).²⁹ As we have seen, Schneider shapes the trajectory of the Exposition Space with a fine brush. She rations the ensemble's intensity, withholding it until the apex, marked "a" in the figure, at the onset of the culminating thematic statement. All the while, she

²⁹ This waveform is a screen shot from the digital audio workstation, Audacity. Waveforms map time in the *x* axis against amplitude (perceived as loudness) in the *y* axis.

controls local-level dynamics, urging the ensemble into a collective sense of the music's smaller-scale hills and valleys.

Remarkably, the precision of Schneider's control continues into the Solo Space despite the improvisational freedom she grants to the rhythm section and soloist. Through her careful planning of harmonic progressions, harmonic rhythm, rhythm section groove, and dynamics, she continues to shape the direction of the composition throughout the Solo Space even while yielding control of content to the improvisers. Additionally, she uses background figures in the horns to develop motives from the Exposition Space and guide the dynamic shape of the music.

Rather than instantaneously shifting from composition to improvisation, Schneider specifies a written melody for the beginning of Gisbert's flugelhorn solo, which begins after the transition section. The harmony in this passage invokes the postbop sub-tradition through its non-tonal succession of sonorities, yet it also expresses Schneider's unique voice. Bass pedals support shifts among various sonorities; for example, Figure 4.12 notates the juxtaposition of the shimmering C whole tone collection at 2:47 / m. 153 with the relatively dark C Dorian that follows it. This harmonic palette is drastically different from the diatonic progressions of the Exposition Space.

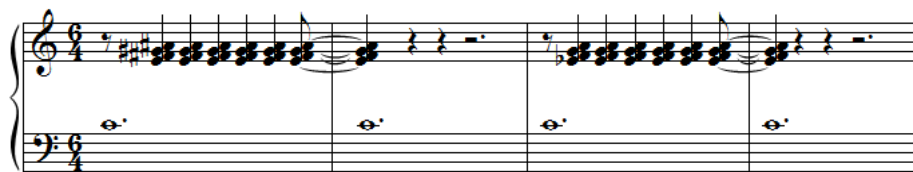


Figure 4.12 Modal juxtaposition in *Hang Gliding*, 2:47 / mm. 153–156

As Gisbert shrugs off the written melody's constraints just after 3:06 / m. 163, the backgrounds contribute to a low-level peak, marked "b" in the waveform in Figure 4.11 (above), before a trajectory of continually decreasing intensity leads to a moment of striking silence at c (3:48–49). Gisbert, along with the rhythm section of pianist Frank Kimbrough and bassist Tony Scherr, creates a moment of peace: the hang glider is calm, ready to explore the sky.

Calm soon yields to energetic exploration, initiating a trajectory that grows from this silence to an eventual climax at the end of the Gisbert's solo, at f. After an initially subtle sense of forward directedness after the silence at c, backgrounds enter at d (5:43 / m. 211) to urge the solo forward.³⁰ The ensemble ushers forward towards the Flugelhorn solo's culmination as the meter returns to the 3–3–3–2 pattern at e, 6:11 / m. 235, and a long stint on an E bass pedal yields to increasing harmonic rhythm.

Rather than climaxing before the end of the solo to leave room for a denouement, the solo continues to intensify in a trajectory directed straight to the entrance of the next soloist. Just after the flugelhorn solo's peak at f, at 6:55 / m. 266, tenor saxophonist Rick Margitza commandeers the ensemble's energy, beginning his solo with high intensity by continuing to build on Gisbert's energy.

The backgrounds continue into the saxophone solo, transforming motives from the paradigm into various different polyrhythmic hits; intermittent rests create space for continued improvisation in the bass, drums, and saxophone. When the backgrounds drop out at g, after a "sendoff" chord at 8:07 / m. 338, the rhythm section shifts to an active

³⁰ Increase in amplitude as it appears on a waveform is a clear indication of forward directedness, but passages like this one may also suggest forward directedness through the anticipation of what is to come: it is obvious that this solo will be developing over time.

groove capable of sustaining intensity in the absence of the backgrounds, evoking exhilaration at the experience of flight. The absence of background figures here drops the intensity slightly, reestablishing a local nadir in preparation for an even more intense dynamic peak at h. Even in the absence of the horn section, however, note that the dynamic level as it appears in the waveform here is greater than that of the majority of the flugelhorn solo, only surpassed by the flugelhorn solo's extreme peak.

The span from g to h gradually introduces backgrounds, often recomposing materials from the Exposition Space and effecting consistent growth in intensity. Figure 4.13 notates the final s-phrase of the Solo Space, at 10:46 / m. 454. Through strong rhythm section fills, an ensemble-wide dynamic surge, and well-established hypermetrical organization, Schneider's ensemble creates an overwhelming expectation for an important SPO (10:53 / m. 462), shown in Figure 4.10 (above) at h.



Figure 4.13 The final s-phrase of the Solo Space in *Hang Gliding*, 10:46 / m. 454–462

At this SPO Margitza's saxophone screams into its altissimo range, arriving at a high B \flat on the downbeat, shown after the double barline in Figure 4.13.³¹ This B \flat , the final tone of his solo, doubles the lead trumpet at the unison in the Recapitulation Space's first melodic pitch; the powerful metrical rhetoric at this locality makes good on its strong

³¹ Although the phrase rhythm of Margitza's solo instantiates a faux elision, I do not label it as such in the phrase-by-phrase table, which does not account for improvised content. The backgrounds arrive at the A, and a new m-phrase begins with the B \flat .

preparation. Thus the Solo Space's trajectory of intensity growth climaxes in perfect correspondence with the Recapitulation Space's onset. In contrast to *Bulería* and *Cerulean*, discussed above, *Hang Gliding* is perhaps the best example of Schneider's tendency to prepare the Recapitulation Space through a climactic ending to the Solo Space.

As the rhythm section sustains the ensemble's accumulated intensity, the Recapitulation Space begins with yet another iteration of the paradigm at 12:09 / m. 462, again serving as a theme. Figure 4.14 notates this iteration, which is rhythmically augmented in relation to Iterations 1–4: events take twice as much time to unfold (compare to Figure 4.8). This thematic statement uses the resolving version of the paradigm shown above in Figure 4.3, coloring tonic with the unexpected modal mixture of i^6 and subsequently returning to major I^6 .

The figure displays a musical score for a theme in *Hang Gliding*. It consists of four staves of music, each in 3/4 time. The first staff (measures 462-470) features a melodic line with a long note in measure 462, followed by a series of eighth notes. Chord labels below the staff are Bb: IV, V7sus (N), and IV. The second staff (measures 470-477) continues the melodic line with a long note in measure 470, followed by a series of eighth notes. Chord labels below the staff are I6 and vi. The third staff (measures 478-485) continues the melodic line with a long note in measure 478, followed by a series of eighth notes. Chord labels below the staff are F#: IV6, IV, and ii (N). The fourth staff (measures 486-494) continues the melodic line with a long note in measure 486, followed by a series of eighth notes. Chord labels below the staff are i6 and I6.

Figure 4.14 Theme at the onset of the Recapitulation Space in *Hang Gliding*, 12:09 / mm. 462–494

Saxophones

Trumpets

Bass

D \flat : V7sus IV

500

I6 (-4) A: V7sus

507

IV I6 IV6

Figure 4.15 The bass descent as it appears in the Recapitulation Space in *Hang Gliding*, 11:25 / mm. 494–513

This resolution would seem to be a fitting way to end the piece. Instead, I⁶ (G \flat /B \flat) leads down a whole step to A \flat 7sus in a sudden modulation from G \flat major to D \flat major at 11:25 / m. 494, initiating the bass descent figure familiar from the Exposition Space.³² As

³² The score notates the rhythm section's parts in F \sharp major, but I notate the key and its constituent chords in G \flat major according to the notation of the B \flat trumpet, permitting the figure's notation to remain in a flat-side key.

in the paradigm's realization within the Recapitulation Space, Figure 4.15 (above) shows that the duration of each pitch event in the bass descent is doubled, with one exception: the last two chords revert to the faster harmonic rhythm of the Exposition Space, creating a sense of acceleration into the final thematic statement (compare to Figure 4.9b, above). A florid countermelody in the saxophones bursts through the trumpets' melodic line in an extroverted spilling out of figures that were previously ornamental.

The figure displays four staves of musical notation, each representing a different voice part. The notation includes various time signatures (3/4, 2/4, 3/4, 2/4, 3/4, 2/4, 3/4, 2/4) and harmonic labels. The first staff is labeled 'C: IV6' and 'V7sus (N)'. The second staff is labeled '522', 'I6', and 'vi'. The third staff is labeled '530', 'Ab: IV6', and 'V7sus'. The fourth staff is labeled '538', 'I6', and 'vi'. The music features a mix of half notes, quarter notes, and eighth notes, with some measures containing rests.

Figure 4.16 Final thematic statement in *Hang Gliding*, 11:45 / m. 514–545

Figure 4.16 (above) notates the final thematic statement at 11:45 / m. 514, which emerges after an intervening passage of contrasting material. Unlike the preceding statement's resolving harmony, this sixth and final iteration of the paradigm reverts to the progression from Iterations 1, 3, and 4, arriving at I^6 too early to cadence and leaping away to unresolved vi . This vi culminates the recapitulative section, leading to a coda.

The ensemble's intensity fades as the soloists trade melodic figures, seeming to finally relax in reflection after an exhilarating experience.

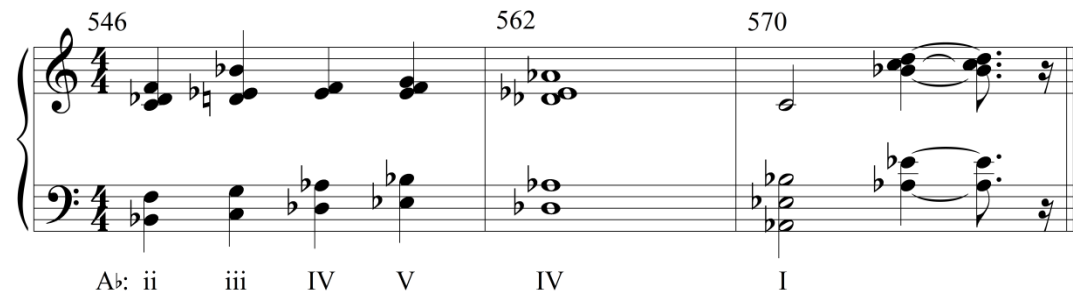


Figure 4.17 Rhythmic reduction of piano voices in the coda to *Hang Gliding*, 12:17 / mm. 546–577.

At 12:17 / m. 546, the coda's harmony leads to what *could* be a final, post-recapitulative cadence through another stepwise ascent, ii–iii–IV–V, as shown in Figure 4.17 (above) through a rhythmic reduction of Schneider's notated piano voicings. Again, Schneider overrides the opportunity for a PAC, moving instead to IV at 12:34 / m. 562. IV lingers for two s-phrases, eventually resolving to the piece's last harmony—root position I—in a plagal cadence at 12:52 / m. 570. Thus the final opportunity to close the harmony in a PAC fails in a ii–iii–IV–V–IV–I progression, where the second IV intervenes between V and I. In a final echo of the Exposition Space at 13:00 / m. 578, the introductory Ab chord returns with the “heartbeat” rhythmic pattern from the Exposition Space (see Figure 4.6, above). This time, however, the chord functions locally as I rather than IV; it is pitched an octave above the introduction, floating dreamily.

The overall form of *Hang Gliding* is uncomplicated: the piece consists of expository, soloistic, and recapitulative sections, elaborated with an introduction, transition, and coda. Despite its large-scale simplicity, however, what stands out about

this form is Schneider's masterful control of motional trajectory in the middleground. Schneider imbues every s-phrase with a role in the piece's trajectory, dictating our expectations and choosing whether to divert or realize them based on a long-range strategy. Many composers have worked from similar three-part templates; what makes Schneider special is her exquisite control of each moment, allowing her to guide listeners on a specific dramatic journey as they experience the piece in real time.

Conclusion

Chapter 4 establishes that Schneider's pieces typically hybridize the formal paradigm of big band arranging with a three-Space conception resonant with sonata movement practice. Exposition, Solo, and Recapitulation Spaces are comprised of seven types of lower level sections, distinguished by function. Expositional, soloistic, and recapitulative sections are labeled in correspondence with the Spaces that they normatively occupy; the four other sections are the introduction, transition, coda, and ensemble feature.

Three formal division criteria help experienced listeners perceive the boundary from one Space to the next. Twenty of the twenty-four pieces in the corpus follow these criteria straightforwardly; of the four exceptional pieces, only *Dissolution* subverts the criteria entirely through its omission of a solo section. The remaining three pieces—*Cerulean*, *Bulería*, and *Choro*—deviate in dialogue with the formal division criteria.

An in-depth analysis of *Hang Gliding* demonstrates how issues of meter and phrase rhythm interact with harmony, rhythm, orchestration, dynamics, and thematic transformation to contribute to the piece's larger formal shape. Cross-domain mappings between the music's structure and two other domains—embodied motion and human

emotion—contribute to a narrative-based reading of the piece. This reading suggests how Schneider’s compositional choices contribute to the piece’s expressive aspects.

Chapter 5: Conclusion

Summary of the Study

This study has addressed the act of listening to Schneider's music, with a particular focus on the translation of real-time listening into structural comprehension. Based on an epistemology sensitive to the numerous conceptual layers contributing to jazz performance practice as developed in Chapter 1, Chapter 2 comprehensively describes the rhythmic norms organizing mainstream jazz. It addresses the formation of the measure level of meter, describing how measures accumulate into hypermeasures based on cultural knowledge. It distinguishes the feeling of metrical localities, which I call "metrical qualia," from the culturally understood metrical meaning of performed content, which I call "metrical rhetoric." It further notes the importance of the physical properties of tones, which I call their "acoustic gestalts." A brand of syncopation that I term the "polyrhythmic framework" rubs against entrained meter. The chapter further distinguishes three theoretical constructs at the level of the phrase—the hypermeasure, "melodic phrase," and "structural phrase."

I have argued that the structural phrase (s-phrase) is a basic formal unit that mediates attention in real-time listening. Experienced listeners expect s-phrases to be organized as eight-bar hypermeasures based on that organization's statistical prevalence in mainstream jazz. Through the performance practice of "marking the downbeat," rhythm sections in mainstream jazz audibly indicate each hypermetrical downbeat at the eight-bar level. The resulting strength of the metrical rhetoric at the beginning of each new s-phrase in normative contexts serves to communicate to the listener that a new s-

phrase has begun; I call this locality the “structural phrase onset” (SPO). Rhythm sections use specialized vocabulary that I call “SPO rhetoric” to mark each SPO.

Chapter 3 presents the results of a corpus study of twenty-four pieces comprised of 1,105 s-phrases, finding that 61% of Schneider’s s-phrases are organized according to the norm in mainstream jazz. Another 31% are “dialogic,” deviating from the norm in direct interaction. Many of the nine types of dialogic deviations are premised on manipulation of the SPO’s locality in relation to the norm—its placement either before or after the hypermetrical downbeat at the eight-bar level. Through recognition of SPO rhetoric, listeners comprehend SPOs *even when an s-phrase is not organized in coordination with the eight-bar level of hypermeter*. Thus 92% of Schneider’s s-phrases—the sum of s-phrases with normative and dialogic designs—are comprehensible to experienced listeners. The remaining 8% of s-phrases are termed “independent” based on their resistance to normative, hypermetrical organization.

S-phrases accumulate into larger spans of form as addressed in Chapter 4. These spans are organized into a medial level of form, the “section.” I categorize sections according to seven types of function. I propose three “formal division criteria” that signal the divisions between formal units at a structural level deeper than the section that I call “three-Spaces.” These division criteria are simple and clearly audible in most cases, but their simplicity undermines neither their accuracy nor their meaningfulness in communicating form to the listener. Thus by perceiving the s-phrase as a low-level unit of form, hearing s-phrases accumulate into sections, and recognizing the division between Spaces through straightforward formal division criteria, experienced listeners perceive deep levels of form through the process of real-time listening.

An in-depth analysis of *Hang Gliding* in Part II of Chapter 4 demonstrates the theory as it plays out in a full piece, considering parameters such as pitch, dynamics, and orchestration. Relying on a dramatic style of analysis influenced by Fred Maus, the interpretation attempts to capture the sense of motional trajectory characteristic of Schneider's compositional style, which is especially relevant owing to the piece's evocation of the experience of hang gliding.

Relevance to Future Research

This dissertation's ramifications for future research are extensive. In my view, the analysis of pitch in jazz depends on accurate characterization of its rhythm, which I hope to have advanced. The consideration of three aspects of this study could be fruitful for jazz scholars. First, I have introduced a number of practical concepts that could inform music theory research. As just one example, the construct of the polyrhythmic framework has been, to my knowledge, utterly absent from the literature. Polyrhythmic frameworks are not special cases but normative, ubiquitous rhythms that constantly organize inventions in jazz. Sensitivity to these structures would impact the way that analysts treat local rhythm.

Second, jazz scholars might find value in the consideration of analytical layers in jazz offered in Chapter 1. Many positivistic analyses of jazz focus on the composed melody of a tune without examining its relationship to either the scheme or to the improvised choruses based on that scheme (see Chapter 1, p. 5ff.). This seems to beg two crucial questions: what is the relationship between the background structure of a tune and the background structure of an improvised chorus? And if such a relationship does not exist, what does a tune's background structure represent or demonstrate about a jazz

performance? More nuanced consideration of analytical layers could tighten the relationship between analyses and their objects of consideration.

Third, rather than taking the entirety of a performance as a synoptic whole organizing successively shallower levels, analysis at the level of the individual s-phrase—its internal coherence and the connections from one to the next—would seem to approximate more closely the experience of listening to jazz and the sense of real-time discovery valued by cultural insiders.¹ Associations between noncontiguous parts of a performance are certainly relevant to listeners.² Further, an s-phrase may have ramifications for future events through its contribution to the motional trajectory leading to those events. But implications that shallow-level events elaborate a single background structure that organizes an entire performance, as improvised in real time, demand serious scrutiny.

This study's ramifications for jazz pedagogy are extensive. In my view, the pervasive focus on chords as they occur in sequence, with scarce regard for their hierarchical relationships, would benefit from sensitivity to the way those chords fit into s-phrases. The feeling of traversing the s-phrase is not, as of yet, embedded into standard jazz pedagogy; in my view, this should be the first step in jazz curricula. This feeling is an essential aspect of jazz performance practice. It is too often left to be discovered by maturing musicians despite how easily it could be taught explicitly. Further, I would suggest that instruction on polyrhythmic frameworks would provide students with a

¹ Steve Larson may have had a similar sense of an appropriate upper limit for Schenkerian analysis of jazz: "Since, in jazz, we are dealing mostly with the eight-measure units that make up the phrases of a theme and variations, the structure of larger musical units is not a central concern." Larson, "Schenkerian Analysis of Modern Jazz: Questions about Method" *Music Theory Spectrum* 20, no. 2 (1998): 212.

² For "associational structure" see Lerdahl and Jackendoff, *Generative Theory*, 17.

requisite vocabulary of jazz rhythms. Such instruction would also guide students into the most important rhythmic aspects of the recorded history with far greater accuracy than the typical emphasis on the eighth-note level of “swing feel.” Attention to polyrhythmic frameworks would make swing feel far easier for students to mimic and, eventually, internalize.

Beyond jazz specialists, this study should be relevant to scholars focusing on issues of meter and phrase. My discussions of qualia, metrical rhetoric, and acoustic gestalt may be useful constructs in the ongoing discussion of meter as a behavior, and my discussions of groove and polyrhythmic frameworks may offer frames of reference for scholars of other African diasporic musics (including popular music). Lerdahl and Jackendoff’s distinction between hypermeter and grouping structure is widely accepted, but my further distinction between hypermeter and structural phrase may offer further clarity to discussions of phrase rhythm. I would suggest that the structural phrase onset and structural phrase onset rhetoric apply readily to discussions of many musical traditions, including the European common practice.

This study suggests numerous possibilities for work in music psychology. Many of my positions may be taken as claims about how experienced listeners interact with an acoustic signal. These claims are intuitive, based on years of personal experience as a jazz musician and listener. Any number of them may be valuably tested in a music psychology lab.

There is a great deal about Schneider’s music that invites further study. The [corpus data](#) would benefit from statistical formalization. While this data is extensive, it is mainly limited in scope to issues of phrase rhythm. The corpus data could readily support

investigations of many different aspects of Schneider's music. This study has scarcely touched on issues of pitch and orchestration, each of which could serve as fruitful topics for their own dissertations. I have excluded consideration of Schneider's arrangements of pieces by other composers, which carry interesting intertextual ramifications. I have hardly addressed the multiplicity of specific grooves, mixed meters, and rubato textures in her music. Given the scale and complexity of Schneider's works, the possible directions for research are seemingly limitless.

I believe that Maria Schneider deserves to be acknowledged as one of the most important currently working composers, and this study aims to provide a deeply developed perspective of her compositional approach. Beyond addressing this single composer's output, however, this study is at its essence an examination of how we participate in musical culture. Music is not just a series of soundwaves and it is certainly not just a score. Music is an interactive behavior through which each participant constructs meaning based on perceived sound, as filtered through cultural knowledge. By examining the intricacies of that process, it is my hope that this study will contribute to the way we understand ourselves as listeners.

Appendix 1: Critical Assessment of Literature

Since its professionalization in the North American academy around the 1950s,¹ the field of music theory has focused the majority of its attention on European traditions, implicitly marginalizing other vernaculars. As a result, some of the field's most basic assumptions—often taken as axioms—are derived from and dependent on the relatively narrow set of cultural practices surrounding the European common practice and twentieth century “art music.” When in the 1990s the field finally began to legitimize the study of other musics, including jazz, authors often rooted their research in the assumptions and analytical concerns already established in the literature—assumptions and concerns that did not necessarily translate to the study of other styles.

I believe that jazz is a tradition distinct from the European common practice in structure and cultural context. Experienced listeners in one tradition are not necessarily experienced in the other; the two come with different sets of expectations, organizational principles, and aesthetic values. Jazz deserves to be studied on its own terms rather than being framed in relation to the cultural hegemony of the European common practice and its analytical apparatus. For that reason, I have been careful to distinguish sources that address jazz in particular, or music in general, from those that focus entirely on the European common practice.

While this principle has guided my literature selections in many cases, Christopher Hasty's *Meter as Rhythm* and William Rothstein's *Phrase Rhythm in Tonal Music* deserve discussion here based on their particular relevance to this study's subject

¹ Thomas Christensen, “Introduction” to the *Cambridge History of Western Music Theory*, ed. Thomas Christensen, 1–23 (Cambridge: Cambridge University Press, 2002): 11–12.

matter. This appendix will characterize some specific areas of tension between these authors' assumptions and my own to clarify my decision not to found my theory directly on their work.

Hasty's characterizations of meter and rhythm seem not to correspond with the perspective offered in the present study. His unification of meter and rhythm as a single phenomenon, the central (and titular) feature of his theory, seems to be incompatible with basic assumptions about the organization of jazz as introduced in Chapters 1 and 2. Hasty refers to an "intricate play of durational repetition that we call meter."² In my view, durational repetition is an issue of *rhythm*, not meter: meter requires *periodicity*, which is more specific and restrictive than the general notion of *repetition*; the concepts are not synonymous. Many of Hasty's most basic claims stem from the unification of these terms. His claim that "repetition or regular recurrence is usually taken to be the central feature of rhythm" seems inapplicable to jazz (6). Jazz's ethos of rhythmic unpredictability, exemplified by "polyrhythmic frameworks" (introduced in Chapter 2), seems to contradict Hasty's association of rhythm with regularity.

As Justin London notes in a review, Hasty's theory focuses heavily on the "recognition" stage of metrical perception, as opposed to the ongoing maintenance of meter.³ The recognition stage is scarcely at issue in mainstream jazz, in which the ubiquitous groove is immediate and visceral to experienced listeners. In listening to jazz, we have no need to determine the meter of each new passage from scratch: grooves are blatantly clear, immediately comprehensible, and sufficient to establish ongoing metrical

² Hasty, *Meter as Rhythm*, 4.

³ Justin London, "Hasty's Dichotomy," *Music Theory Spectrum* 21, No. 2, (Autumn, 1999): 266.

expectation.⁴ These expectations are fixed based on the norm in mainstream jazz for regular meter to accumulate into eight-bar hypermeasures (see p. 54ff.).

In perhaps the most drastic incompatibility with the present theory, Hasty undermines the importance of habit in perceiving meter. He critiques the idea that “the repetition of pulse, once established, will persist or perpetuate itself in spite of rhythmic irregularities,” arguing that “the persistence is not achieved passively as habit but actively in the self-creation of the new event” (168). This view seems to run contrary to the notion of groove. The onset of a groove sets into motion a set of expectations with overwhelming consistency: groove is built for ongoing maintenance even in the face of syncopation’s persistent challenges.

The centerpiece of the theory, “projection,” is a powerful theoretical approach, but Hasty colors its presentation with his philosophical underpinnings. For example, he characterizes one of his most basic concepts, “continuation,” as a “decision to continue,” suggesting that meter is an active choice on the part of the listener (104). Hasty does not address how his theory corresponds to the theory of entrainment, which perhaps gained popularity slightly after the time of his monograph’s publication. But entrainment’s representation of low-level meter as an involuntary reaction to metrically organized acoustic signals captures the experience of listening to jazz better than Hasty’s work, which suggests that meter involves ongoing, conscious decisions about how to react to music.

A second omission from my theory’s exposition that may loom large to some readers is William Rothstein’s *Phrase Rhythm in Tonal Music*. Rothstein’s theory places

⁴ Future study of mixed meter and rubato in Schneider’s music could benefit more directly from Hasty’s work.

significant emphasis on how pitch content shapes what he calls “inner form,” which he characterizes as “the tonal dynamic of a work—its large-scale harmonic and linear layout.”⁵ For Rothstein, pitch organization is inseparable from the idea of phrase. While I enthusiastically support Rothstein’s equation of phrase with a sense of motion, his dependence on a particular kind of motion—*tonal* motion—casts too narrow a net for application to jazz.

Mainstream jazz performances are free to go their entirety without a single harmonic formula that would qualify as a cadence according to traditional theory. Even if a scheme includes a locality appropriate for a cadence, musicians frequently eschew its coordinated realization in the acoustic signal. Jazz performances may go minutes at a time without clearly cadencing; many of Schneider’s pieces never cadence in the traditional sense. According to Rothstein’s theory, such a performance would seemingly lack any single complete phrase.

Of course, Rothstein’s theory is intended to address *tonal* music, as visibly signaled in the title, and his association between phrase endings and cadences is wholly appropriate for the European common practice. This focus on tonal characteristics is precisely the reason that I have forgone his formulations and assumptions in this study. In what I believe to be a more appropriate outlook for jazz performance practice, I take pitch content as a parameter distinct from and incidental to phrase. Phrase is a *rhythmic* phenomenon, resulting from the accumulation of measures, which themselves are meaningful and perceptible units in jazz performances. Pitch content may fill those units with infinite flexibility.

⁵ Rothstein, *Phrase Rhythm*, 104.

Rothstein hints at the distinction developed in the present study between melodic phrase and structural phrase, but does not explicate it substantially. In analyzing Johann Strauss's *Blue Danube Waltz* he writes, "We might say that the fore-phrase of the waltz is sixteen measures long in both the melody and the harmony, but that the melody's sixteen measures are mm. 1–16 while the harmony's are mm. 2–17."⁶ Rothstein's choice not to further develop these two aspects of phrase as separate constructs may stem from their mutually dependent relationship in the European common practice. Christopher Hasty expresses the assumption that perhaps discourages Rothstein from distinguishing these two senses of phrase: "In projective theory meter is not given the sort of independence or autonomy that would place it in opposition to or in conflict with grouping or the articulation of phrases or phrase constituents."⁷

Examples comparable to *Blue Danube Waltz* occur regularly in jazz performances: the composed or improvised melody is very often out of phase with the structural phrase (his "harmonic sense of phrase").⁸ But in the present theory's focus on jazz performance practice, where melodic phrases are free to occur independently of the structural phrase at the whim of the improviser, it is crucial to separate these two senses of phrase as ultimately independent parameters. The difference is in the degree to which melodic rhythm depends on the underlying harmony and meter, which is significant in the European common practice and minimal in jazz. I argue that the aspect that is consistent from performance to performance in jazz—the structural phrase—is more definitively the purview of phrase as a formal unit than the melodic phrase.

⁶ Ibid., 22.

⁷ Hasty, *Meter as Rhythm*, 122.

⁸ See Keith Waters, "Blurring The Barline: Metric Displacement in the Piano Solos of Herbie Hancock," *Annual Review of Jazz Studies* 8 (1996): 19–37.

Even in light of these incompatibilities between Rothstein's theory and the principles of jazz organization, some might wonder why I have circumvented his terminology for phrase expansion in favor of newly coined terminology in Chapter 3. I have chosen not to interact with Rothstein's taxonomy for two reasons. First, Rothstein's structuralist conception of a phrase as a synoptic whole is fundamentally at odds with the outlook of phrase as a real-time experience. From my perspective, a phrase cannot be *expanded* but rather *continues* in real time past a locality expected to be conclusive.

Second, the particulars of Rothstein's phrase expansion techniques are often incongruent with the deviational devices as they occur in Schneider's music. For example, my "elision" (Chapter 3, p. 100ff.) might seem to be compatible with Rothstein's "overlap." Indeed, his Example 2.20, the opening of Beethoven's Piano Sonata in C Major, Op. 2, No. 3, corresponds neatly to my description of the elision.⁹ But Rothstein's overlap is more broadly inclusive than my elision, and his subsequent example—Chopin's Mazurka in F# Minor, Op. 6, No. 1, is unrelated to my elision.¹⁰

Rothstein's reading of the Chopin centers on the dual meaning of a melodic figure that functions as both a conclusion to an antecedent phrase and an initiation of a consequent phrase. This melodic design is not uncommon in Schneider's music or in jazz generally; in fact, it does not contradict any aspect of normative phrase structure: again, the melodic phrase, in my view, is incidental to the organization of the structural phrase. Because the Chopin leaps emphatically to a doubled bass note in a lower register, perceptibly marking the onset of the consequent phrase after eight complete measures, I do not read this example as a deviation; it represents rather directly the normative

⁹ Rothstein, *Phrase Rhythm*, 44.

¹⁰ *Ibid.*, 46.

structural phrase as I define it. Thus my elision differs from Rothstein's overlap in orientation, structural details, and scope. Other deviational devices discussed in Chapter 3 demonstrate analogous inconsistencies with Rothstein's devices for phrase expansion; because my assumptions differ from Rothstein's, the deviational devices proposed in this study do not correspond directly with his in the details of their mechanics.

I would like to reiterate that the recognition afforded to Hasty and Rothstein as prominent music theorists is well deserved, and that their work is undeniably well-conceived, rigorous, and valuable. Many of their ideas have resonated widely in subsequent publications and in discourse on rhythm in music, and as such they have surely influenced this study. My choice to relegate discussion of their work to this appendix is not an indictment; it is instead a matter of creating space to study jazz on its own terms.

Appendix 2: Glossary

- Absolute representation*: identification of localities according to precisely measured time indications such as a time stamps
- Acoustic gestalt*: the physical profile of a tone according to seven parameters: duration, attack style, release style, loudness, timbre, attack timing, and frequency
- Acoustic signal*: the physical sound of musical performance (as distinct from notation or mental representation)
- Addition*: one or more measures that interrupt a structural phrase's functional measure cycle by delaying an expected metrical qualia at the measure level
- Audiation*: the internal imagining of music
- Audiated stream*: the act of "scrolling through" a scheme, or the vested participation in realization as it happens in real time
- Beat*: a particular locality within a metrical structure
- Chord Changes*, or *Changes*: a particular set of chords supportive of a scheme's written melody, distributed through time in a specific way to correspond with fixed points within the scheme's hypermeter.
- Compression*: a perceived skip forward in the functional measure cycle, resulting in the decrease in length of a structural phrase
- Conceptual model*: "a cognitive construct that is stored in memory"¹
- Connection*: analytical technique through which unaccented tones within a polyrhythmic framework are reduced out
- Corpus study*: an analytical method involving the empirical study of "large bodies of naturally occurring musical data."²
- Deviational mixed meter*: the modification of a meter that is isochronous at every structural level through the addition or omission of a beat in an otherwise recognizable context
- Dialogic*: an aspect of structure characterized by interaction with a norm
- Displacement*: analytical technique through which a syncopated rhythm is reduced into a non-syncopated hearing
- Functional measure label*: the fixed name for a measure-level locality of a hypermetrical structure
- Elision*: the arrival of a melodic phrase in precise coincidence with a structural phrase onset, resulting in a shortened structural phrase
- Empty bar*: a subtype of the addition, the empty bar defers an expected functional measure through sustained rhythm section activity and rests in the melody
- Entrainment*: the ability of humans to "time their attention to events in the world by adapting an internal rhythm (a neural oscillation of attentional energy) to note onsets"³
- Event*: any audibly marked moments in a musical texture

¹ Lawrence Zbikowski, *Conceptualizing Music*, 217.

² Temperley and VanHandel, "Special Issues," 1.

³ Siu-Lan Tan, et al, *Psychology of Music*, 105.

Expression: in reference to rhythm, the high-resolution timings between note onsets; or, in reference to analysis, the aspects of music inaccessible to positivistic determination

Formal division criteria: theoretical guidelines that determine how sections signal divisions between three-Spaces

Free meter: a metrical setting characterized by independence from normative metrical organization

Groove: the feeling of a passage, as influenced by its rhythmic structure and the acoustic gestalts of its constituent tones

Held bar: a subtype of the addition, the held bar defers an expected functional measure by tying a tone of arrival, often harmonized as a chord, into one or more additional measures

Hypermeasure: a unit of hypermeter

Hypermeter: the operation of metrical principles at structural levels deeper than the measure

Independent: an aspect of structure characterized by the avoidance of interaction with a norm

Inter-onset interval (IOI): the absolute value of the difference between the time stamps of two particular localities

Melodic phrase (m-phrase): the rhythm of the melody, harmony, or rhythm section content, capturing the characteristic freedom for internal content to be organized independently of the structural phrase

Meter: a behavior arising in interaction with an acoustic signal that coordinates multiple listeners' attention in time

Metrical accent: the strength of expectation for a structurally important event at a particular locality

Metrical structure: a recognizable attentional pattern idealized from an acoustic signal

Metrical rhetoric: the metrical meaning of a tone as interpreted by a listener

Misleading metrical cues: the disguise of metrical qualia through syncopation in voices that typically function to clarify meter

Norm: most common option for a given structural parameter

Periodicity: patterned rotation through multiple types of events

Phenomenal Accent: "any event on the musical surface that gives emphasis or stress to a moment in the musical flow"⁴

Polyrhythmic framework (PF): additively organized streams of tones with strong acoustic gestalts that mix durations related by ratios of 2:3

Pulse: a rhythmic structure at a certain timescale that is perceived as being isochronous (equally timed)

Realization: the act of creating form in real time, and the acoustic result of that creation

Relative representation: identification of localities in low-integer proportions to other localities

Rhythm: the locality of events in time and the temporal relationships between those events

⁴ Lerdahl and Jackendoff, *Generative Theory*, 17.

Rhythm section: an instrumental group usually consisting of some combination of bass, drums, piano, and guitar; this section is responsible to express the scheme's features, creating a common reference point for listeners

Rhythmic counterpoint: the discernment in a texture of multiple rhythmically interactive streams

Rubato: rhythmic settings characterized by the avoidance of isochronous (equally timed) pulses at all structural levels

Scheme: the framework repeated in a chorus form⁵

Section: a middleground formal unit constituent to the three-Space

Surge: a subtype of the addition, the surge defers an expected functional measure through continued melodic motion

Statistical learning: "the idea that people learn from the statistical frequencies of events in their environment"⁶

Structural Phrase (s-phrase): the phrase-level formal unit of a scheme, normatively but not necessarily congruent with hypermeter

Structural Phrase Onset (SPO): a structurally important attentional point that begins each new structural phrase

Structural Phrase Onset Rhetoric (SPO rhetoric): strong metrical rhetoric used to increase the perceptual salience of a structural phrase onset through "marking the downbeat"

Structure: in reference to rhythm, the low-resolution summary of particular rhythms into simply-proportioned note values; or, in reference to analysis, the aspects of music that appear as positivistic objects available for direct scrutiny

Subphrase deviation: a four-measure structural phrase

Three-Space: a deep-level formal unit, including Exposition, Solo, and Recapitulation Spaces

Tactus: the level of pulse to which we typically tap our feet, dance, or conduct, generally ranging from around 40 to 160 beats per minute

Ternary s-phrase: a single, twelve-measure s-phrase comprising a grouping of three subphrases

Timing: the temporal placement of a tone's onset in relation to its expected position in an idealized rhythmic structure

Tone: the physical sound of a single acoustic utterance

Turnaround: the structural gap between the arrival of an m-phrase and the subsequent structural phrase onset

Unfulfilled subphrase: a structural phrase that begins normatively until structural phrase onset rhetoric disrupts the functional measure cycle by occurring too early relative to the norm

Qualia: "the introspectible, phenomenal, subjective character of conscious experience"⁷; "metrical qualia" refers to the feeling of a beat as experienced by a listener

⁵ Love, "Subliminal Dissonance," 49.

⁶ David Temperley and Leigh VanHandel, "Introduction," 1.

⁷ Louis C. Charland, "Qualia," in *The Oxford Companion to Emotion and the Affective Sciences*, ed. David Sander and Klaus R. Scherer (Oxford: Oxford University Press, 2009), 327.

Bibliography

- Belck, Scott. "Lickety Split: Modern Aspects of Composition and Orchestration in the Large Jazz Ensemble Compositions of Jim McNeely: An Analysis of 'Extra Credit,' 'In the Wee Small Hours of the Morning,' and 'Absolution.'" DMA diss., University of Cincinnati, 2008.
- Belfiglio, Anthony. "Fundamental Rhythmic Characteristics of Improvised Straight-Ahead Jazz." DMA Dissertation, The University of Texas at Austin, 2008.
- Benadon, Fernando. "Slicing the Beat: Jazz Eighth-Notes as Expressive Microrhythm." *Ethnomusicology* 50, no. 1 (Winter, 2006): 73–98.
- Berliner, Paul F. *Thinking in Jazz: The Infinite Art of Improvisation*. Chicago: University of Chicago Press, 1994.
- Berry, Wallace. *Structural Functions in Music*. Englewood Cliffs, N.J.: Prentice-Hall, 1976.
- Biergé, Pieter, ed. *Musical Form, Forms, and Formenlehre*. Leuven: Leuven University Press, 2009.
- Bonds, Mark Evan. *Wordless Rhetoric: Musical Form and the Metaphor of Oration*. Cambridge, Mass.: Harvard University Press, 1991.
- Brower, Candace. "Memory and the Perception of Rhythm." *Music Theory Spectrum* 15, no. 1 (Spring, 1993): 19–35.
- Butterfield, Matthew. "Why do Jazz Musicians Swing Their Eighth-Notes." *Music Theory Spectrum* 33, no. 1 (2011): 3–26.
- Cadwallader, Allen and David Gagné. *Analysis of Tonal Music: A Schenkerian Approach*, 3rd edition. Oxford: Oxford University Press, 2011.
- Carpenter, Patricia and Severine Neff. Commentary to *The Musical Idea and the Logic, Technique, and Art of its Presentation*, by Arnold Schoenberg. Bloomington and Indianapolis: Indiana University Press, 2006.
- Caplin, William Earl. *Classical Form: A Theory of Formal Functions for the Instrumental Music of Haydn, Mozart, and Beethoven*. New York: Oxford University Press, 1998.
- Clarke, Eric. "Rhythm and Timing in Music," in *Psychology of Music*, 2nd edition, edited by Diana Deutsch, 473–500. New York: Academic Press, 1999.
- Charland, Louis C. "Qualia," in *The Oxford Companion to Emotion and the Affective Sciences*, edited by David Sander and Klaus R. Scherer, 327. Oxford: Oxford University Press, 2009.
- Christensen, Thomas. "Introduction" to *Cambridge History of Western Music Theory*, edited by Thomas Christensen, 1–23. Cambridge: Cambridge University Press, 2002.
- Cohn, Richard. "Introduction to Neo-Riemannian Theory: A Survey and a Historical Perspective." *Journal of Music Theory* 42, no. 2 (Fall, 1998): 167–179.
- . "Transpositional Combination of Beat-Class Sets." *Perspectives of New Music* 30, no. 2 (1992): 146–177.
- Coker, Jerry. *Jazz Keyboard for Pianists and Non-Pianists: Class or Individual Study*. Belwin Mills, 1991.
- Copland, Aaron. "Jazz Structure and Influence on Modern Music." *Modern Music* 4 (1927): 9–14.

- Cox, Arnie. "Embodying Music: Principles of the Mimetic Hypothesis," *Music Theory Online* 17, no. 2 (2011).
<http://www.mtosmt.org/issues/mto.11.17.2/mto.11.17.2.cox.html>.
- Dobbins, Bill. *Jazz Arranging and Composing: A Linear Approach*. Rottenberg, N. Germany: Advance Music, 1986.
- Doleac, Benjamin. "Strictly Second Line: Funk, Jazz, and the New Orleans Beat." *Ethnomusicology Review* 18 (2013): 1–16. Accessed 10/25/2014.
<http://ethnomusicologyreview.ucla.edu/journal/volume/18/piece/699>.
- Domek, Richard. "The Late Duke: Ellington's And Strayhorn's Music for *Anatomy of a Murder* Considered." *Jazz Perspectives* 6, no. 1–2 (April–August, 2012): 75–121.
- Enstice, Wayne, and Janis Stockhouse. "Maria Schneider," in *Jazzwomen: Conversations with 21 Musicians*, 271–85. Bloomington: University of Indiana Press, 2004.
- Folio, Cynthia. "An Analysis of Polyrhythm in Selected Improvised Solos," in *Concert Music, Rock, and Jazz Since 1945: Essays and Analytical Studies*, edited by Elizabeth West Marvin and Richard Hermann, 103–34. Rochester, NY: University of Rochester Press, 1995.
- Forte, Allen. *The American Popular Ballad of the Golden Era, 1924-1950: A Study in Musical Design*. Princeton, NJ: Princeton University Press, 1995.
- Fraisse, Paul. "Perception and Estimation of Time." *Annual Review of Psychology* 35 (February, 1984): 1–37.
- Fuerzeig, David Kahn. "Making the Right Mistakes: James P. Johnson, Thelonious Monk, and the Trickster Aesthetic." DMA diss., Cornell University, 1997.
- . "The Right Mistakes: Confronting the 'Old Question' of Thelonious Monk's Chops." *Jazz Perspectives* 5, no. 1 (2011): 29–59.
- Gauldin, Robert. "The Theory and Practice of Chromatic Wedge Progressions in Romantic Music." *Music Theory Spectrum* 26, no. 1 (Spring, 2004): 1–22.
- Gordon, Edwin E. "Audiation, Imitation and Notation: Musical Thought and Thought About Music." *American Music Teacher* 38, no. 5 (April/May, 1989): 15–17, 59.
- . "Research Studies in Audiation: I." *Bulletin of the Council for Research in Music Education*, no. 84 (Fall, 1985): 34–50.
- Gourse, Leslie. "Maria Schneider: Jazz Composer for Big Bands," in *Madame Jazz: Contemporary Women Instrumentalists*, 167–169. New York: Oxford University Press, 1995.
- Gridley, Mark C. *Jazz Styles: History and Analysis*, 10th ed. Upper Saddle River, NJ: Prentice Hall, 2009.
- Harrison, Max, Eric Thacker, and Stuart Nicholson. *Modernism to Postmodernism*, vol. 2 of *The Essential Jazz Records*. London; New York: Mansell, 1984.
- Hepokoski, James and Warren Darcy. *Elements of Sonata Theory: Norms, Types, and Deformations in the Late Eighteenth Century Sonata*. New York: Oxford University Press, 2006.
- Heyer, Allison. "Analysis of Maria Schneider's Green Piece." Master's thesis, University of Oregon, 2007. <http://www.alisonlosik.com/webdocs/webthesis.pdf> (accessed December 2, 2011).
- Hodson, Robert. *Interaction, Improvisation, and Interplay in Jazz*. New York: Routledge, 2007.

- Honing, Henkjan. "Structure and Interpretation of Rhythm in Music," in *The Psychology of Music*, 3rd edition, edited by Diana Deutsch, 369–404. Amsterdam: Academic Press, 2013.
- Howland, John Louis. *Ellington uptown: Duke Ellington, James P. Johnson, and the Birth of Concert Jazz*. Ann Arbor: University of Michigan Press, 2009.
- Huron, David. *Sweet Anticipation: Music and the Psychology of Expectation*. Cambridge, Mass.: MIT Press, 2006.
- Huron, David and Ann Ommen. "An Empirical Study of Syncopation in American Popular Music, 1890–1939." *Music Theory Spectrum* 28, no. 2 (Fall, 2006): 211–231.
- Iyer, Vijay. "Embodied Mind, Situated Cognition, and Expressive Microtiming in African-American Music." *Music Perception* 19, no. 3 (Spring, 2002): 387–414.
- . "Microstructures of Feel, Macrostructures of Sound: Embodied Cognition in West African and African-American Musics." Ph.D. Diss., University of California, Berkeley, 1998.
- Janus, Cicily. *The New Face of Jazz: An Intimate Look at Today's Living Legends and the Artists of Tomorrow*. New York: Billboard Books, 2010.
- Julien, Patricia. "The Function of Non-functional Harmony." *Jazz Educators Journal* 34, no. 2 (September, 2001): 53–56.
- . "The Structural Function of Harmonic Relations in Wayne Shorter's Early Compositions: 1959–1963." Ph.D. Diss., University of Maryland–College Park, 2003.
- . "How to Write a Jazz Composition's Chord Progression." *Journal of Music Theory Pedagogy* 26 (2012): 29–58.
- Karpinski, Gary. "Ambiguity: Another Listen." *Music Theory Online* 18, no. 3 (September, 2012).
<http://www.mtosmt.org/issues/mto.12.18.3/mto.12.18.3.karpinski.php>.
- Keil, Charles. "Motion and Feeling Through Music." *The Journal of Aesthetics and Art Criticism* 24, no. 3 (Spring, 1966): 337–349.
- Kennedy, Gary W. "Schneider, Maria." *The New Grove Dictionary of Jazz*, 2nd ed.. *Grove Music Online*. Oxford Music Online. Oxford University Press. <http://www.oxfordmusiconline.com.ezproxy.uky.edu/subscriber/article/grove/music/J687400>.
- Kernfeld, Barry. *What to Listen For in Jazz*. New Haven: Yale University Press, 1995.
- Koch, Heinrich Christoph. *Introductory Essay on Composition* (1782–93), translated by Nancy Kovaleff Baker. New Haven: Yale University Press, 1983.
- Komar, Arthur J. *Theory of Suspensions: A Study of Metrical and Pitch Relations in Tonal Music*. Princeton: Princeton University Press, 1971.
- Lakoff, George, and Mark Johnson. *Metaphors We Live By*. Chicago; London: University of Chicago Press, 2003.
- Larson, Steve. "Strict Use of Analytic Notation." *Journal of Music Theory Pedagogy* 10 (1996): 37–77.
- . "Schenkerian Analysis of Modern Jazz: Questions About Method." *Music Theory Spectrum* 20, no. 2 (Fall, 1998): 209–41.
- . *Musical Forces: Motion, Metaphor, and Meaning in Music*. Bloomington: Indiana University Press, 2012.

- Lerdahl, Fred, and Ray Jackendoff. *A Generative Theory of Tonal Music*. Cambridge, Mass.: MIT Press, 1983.
- Lester, Joel. *The Rhythms of Tonal Music*. Carbondale: Southern Illinois University Press, 1986.
- Levine, Mark. *The Jazz Theory Book*. Petaluma, CA: Sher Music, 1995.
- Liebman, David. *A Chromatic Approach to Jazz Harmony and Melody*. Rottenburg: Advance Music, 1991.
- Lindsay, Gary. *Jazz Arranging Techniques: From Quartet to Big Band*. Miami: Staff Art, 2005.
- London, Justin. *Hearing in Time: Psychological Aspects of Musical Meter*, 2nd ed. New York: Oxford University Press, 2012.
- . “Loud Rests and Other Strange Metric Phenomena, or Meter as Heard.” *Music Theory Online* 0, no. 2 (1993). <http://societymusictheory.org/mt0>.
- Love, Stefan. “On Phrase Rhythm in Jazz.” Ph.D. diss., Eastman School of Music, 2011.
- . “An Approach to Phrase Rhythm in Jazz.” *Journal of Jazz Studies* 8, no. 1 (Spring, 2012): 4–32.
- . “Subliminal Dissonance or ‘Consonance’? Two Views of Jazz Meter.” *Music Theory Spectrum* 35, no. 1 (Spring, 2013): 48–61.
- Martin, Henry. *Charlie Parker and Thematic Improvisation*. Lanham, MD: Scarecrow Press, 1996.
- . “Expanding Jazz Tonality: The Compositions of John Coltrane.” *Theory and Practice* 37/38 (2012–13): 185–219.
- . “Expanding Jazz Tonality: The Compositions of Wayne Shorter.” Paper presented at the Eighth European Music Analysis Conference. University of Leuven, Belgium, September 19, 2014.
- . “Maria Schneider’s *Hang Gliding*: Aspects of Structure” *Tijdschrift voor Muziektheorie* 8, no. 1 (February, 2003): 16–24.
- Martin, Henry and Keith Waters. *Jazz: The First 100 Years*, 3rd ed. Boston: Schirmer, 2012.
- Marx, Adolph Bernhard. “Form in Music” [Die Form in der Musik], in *Musical Form in the Age of Beethoven: Selected Writings on Theory and Method*, edited and translated by Scott Burnham, 55–90. Cambridge: Cambridge University Press, 1997.
- Maus, Fred. “Music as Drama,” in *Music and Meaning*, edited by Jenefer Robinson, 105–130. Ithaca: Cornell University Press, 1997.
- McKinney, Elizabeth. “Maria Schneider’s ‘Hang Gliding’: Dual Analyses for a Hybrid Musical Style.” MM thesis, Duquesne University, 2008.
- McLaughlin, Michael. “African Music, Rhythm and Jazz.” *Proceedings of National Association of Jazz Educators Research* 3 (1983): 74–91.
- Meyer, Leonard B. *Emotion and Meaning in Music*. Chicago: University of Chicago Press, 1956.
- Michaelson, Garrett. “Analyzing Musical Interaction in Jazz Improvisations of the 1960s.” PhD diss., Indiana University, 2013.
- Michon, J. A. “The Making of the Present,” in *Attention and Performance*, edited by J. Requin, 90–111. Hillsdale, N.J.: Erlbaum, 1978.

- Miles, Richard, and Ronald Carter. *Teaching Music Through Performance in Jazz*. GIA Pubns, 2008, 107.
- Miller, Ron. *Modal Jazz Composition and Harmony*. 2 vols. Rottenberg, N. Germany: Advance Music, 1996.
- Milliner, Jesse. "Quo Vadis: Exploring Musical Forms in Jazz." DMA diss., University of Miami, 2006.
- Monson, Ingrid. *Saying Something: Jazz Improvisation and Interaction*. Chicago: University of Chicago Press, 1996.
- Morgan, Robert Porter. "The Delayed Structural Downbeat and its Effect on the Tonal and Rhythmic Structure of Sonata Form Recapitulation." Ph.D. Diss., Princeton, 1969.
- Narmour, Eugene. *The Analysis and Cognition of Basic Melodic Structures: The Implication-Realization Model*. Chicago: University of Chicago Press, 1990.
- Ng, Samuel. "Phrase Rhythm as Form in Classical Instrumental Music." *Music Theory Spectrum* 34, no. 1 (Spring, 2012): 51–77.
- Norman, Liesa Karen. "The Respective Influence of Jazz and Classical Music on Each Other, the Evolution of Third Stream and Fusion and the Effects Thereof into the 21st Century." DMA Diss., University of British Columbia, 2002.
- Osland, Miles. "Jazz Speed Reading: A Method for Feeling Rhythms at Fast Tempo." *Jazz Educators Journal* 31, no. 5 (March, 1999): 42–43.
- Peterson, Lloyd. *Music and the Creative Spirit: Innovators in Jazz, Improvisation, and the Avant-Garde*. Lanham, MD: Scarecrow Press, 2006.
- Ratliff, Ben. *The Jazz Ear: Conversations over Music*. New York: Times Books, 2008.
- Reeves, S. "Gil Evans: The Art of Musical Transformation." *Annual Review of Jazz Studies* 12 (2002): 1–40.
- Rinzler, Paul. "Preliminary Thoughts on Analyzing Musical Interaction Among Jazz Performers." *Annual Review of Jazz Studies* 4 (1988): 153–160.
- Rothfarb, Lee. "Energetics," in *The Cambridge History of Western Music Theory*, edited by Thomas Christensen, 927–55. Cambridge; New York: Cambridge University Press, 2002.
- Rothstein, William Nathan. "Rhythmic Displacement and Rhythmic Normalization," in *Trends in Schenkerian Research*, edited by Allen Cadwallader, 87–113. New York: Schirmer Books, 1990.
- . *Phrase Rhythm in Tonal Music*. Ann Arbor: Musicalia Press, 2007.
- Russo, William. *Jazz Composition and Orchestration*. Chicago: University of Chicago Press, 1968.
- Saslaw, Janna. "Forces, Containers, and Paths: The Role of Body-Derived Image Schemas in the Conceptualization of Music." *Journal of Music Theory* 40, no. 2 (Autumn, 1996): 217–243.
- Schachter, Carl. *Unfoldings: Essays in Schenkerian Theory and Analysis*, edited by Joseph N. Straus. Oxford: Oxford University Press, 1999.
- Schmalfeldt, Janet. *In the Process of Becoming: Analytical and Philosophical Perspectives on Form in Early Nineteenth-Century Music*. Oxford: Oxford University Press, 2011.
- Schneider, Maria. Interview by Monk Rowe. *Hamilton College Jazz Archive* (January 12, 2001): 1–15. <http://contentdm6.hamilton.edu/cdm/ref/collection/jazz/id/1252>.

- Schoenberg, Arnold. *The Fundamentals of Musical Composition*. New York: St. Martin's Press, 1967.
- Schuller, Gunther. *Early Jazz*. New York: Oxford University Press, 1968.
- . "The Future of Form in Jazz," in *Musings: The Musical Worlds of Gunther Schuller*, 18–25. New York: Oxford University Press, 1986.
- . *The Swing Era*. New York: Oxford University Press, 1989.
- Slodoba, John A. "Expressive Skill in Two Pianists: Metrical Communication in Real and Simulated Performances." *Canadian Journal of Psychology* 39 (1985): 273–93.
- Stein, Deborah. "Introduction to Musical Ambiguity," in *Engaging Music: Essays in Music Analysis*, edited by Deborah Stein, 77–88. Oxford: Oxford University Press, 2005.
- Stewart, Alexander. "Composition and Performance in New York City Big Bands (1989–1999)." PhD diss., City University of New York, 2000.
- . *Making the Scene: Contemporary New York City Big Band Jazz*. Berkeley: University of California Press, 2007.
- Stone, Ruth M. and Verlon L. Stone. "Feedback, Event and Analysis: Research Media in the Study of Music Events." *Ethnomusicology* 25, no. 2 (1981): 215–26.
- Straus, Joseph N. "The Problem of Prolongation in Post-Tonal Music." *Journal of Music Theory* 31, no. 1 (1987): 1–21.
- Sturm, Fred. *Changes over Time: The Evolution of Jazz Arranging*. Rottenburg, Germany: Advance Music, 1995.
- . "Interview with Maria Schneider" in Maria Schneider, *Evanescence*, edited by Fred Sturm, v–xii. Universal Edition, 1998.
- . "Maria Schneider: As Far as Dreams Go" *Jazz Educators Journal* 32, no. 2 (September, 1999): 28–32, 34–37.
- Strunk, Steven. "The Harmony of Early Bebop: A Layered Approach." *Journal of Jazz Studies* 6, no. 1 (Fall–Winter, 1979): 4–53.
- . "Notes on Harmony in Wayne Shorter's Compositions, 1964–67." *Journal of Music Theory* 49, no. 2 (Fall, 2005): 301–331.
- Tan, Siu-Lan, et al. *Psychology of Music: From Sound to Significance*. Hove and New York: Psychology Press, 2010.
- Temperley, David and Leigh VanHandel. "Introduction to the Special Issues on Corpus Methods." *Music Perception: An Interdisciplinary Journal* 31 no. 1 (September, 2013): 1–3.
- von Mosch, Max. "Maria Schneider's Hang Gliding: Spectrographic Images." *Sonus* 30, no. 2 (Spring, 2010): 67–97.
- Waters, Keith. "Blurring the Barline: Metrical Displacement in the Piano Solos of Herbie Hancock." *Annual Review of Jazz Studies* 8 (1996): 19–37.
- . "What Is Modal Jazz?" *Music Educators Journal* 33, no. 1 (July, 2000): 53–55.
- . "Modes, Scales, Functional Harmony, and Nonfunctional Harmony in the Compositions of Herbie Hancock" *Journal of Music Theory* 49 no. 2 (Fall, 2005): 333–357.
- . *The Studio Recordings of the Miles Davis Quintet, 1965–68*. New York: Oxford University Press, 2011.

- Webster, James. "Sonata Form," in *The New Grove Dictionary of Music and Musicians*, 2nd ed., edited by Stanley Sadie and John Tyrell, vol. 2, 687–701. London: Macmillan, 2001.
- Wild, David. "Dancing About Jazz." *Signal to Noise* 42 (Summer, 2006): 30–34.
- Williams, Justin. "Maria Schneider, Digital Patronage, and Fan/Artist Interactivity." Paper presented at the American Musicological Society annual meeting, New Orleans, Louisiana, November, 1–4, 2012.
- Wright, Rayburn. *Inside the Score*. Delevan, NY: Kendor Music, 1982.
- Zarlino, Gioseffo. *The Art of Counterpoint: Part 3 of Le Institutione harmoniche* (1558), translated by Grey Marco and Claude Palisca. New Haven: Yale University Press, 1968.
- Zbikowski, Lawrence Michael. *Conceptualizing Music: Cognitive Structure, Theory, and Analysis*. Oxford: Oxford University Press, 2002.
- . "Metaphor and Music," in *The Cambridge Handbook on Metaphor*, edited by Ray Gibbs, Jr., 502–524. Cambridge: Cambridge University Press, 2008.
- Zemler, Emily. "Words of Wisdom. Music School Commencement Speeches." *Jazz Times* (2004/2005 Jazz Education Guide): 101.
- Zuckerkandl, Victor. *Sound and Symbol: Music and the External World*. New York: Pantheon, 1956.

Discography

Stan Getz and Joao Gilberto, *Getz/Gilberto*, Verve 8545, 1964, LP.

Rollins, Sonny. "Tenor Madness," on *Tenor Madness*. Recorded 1956. Prestige LP 7047.

Maria Schneider Jazz Orchestra. *Evanescence*. Originally released as Enja CD ENJ-8048 2, 1994. ArtistShare 0006. 2005. CD.

———. *Coming About*. Originally released 1996. ArtistShare AS0087. 2008. CD.

Maria Schneider Orchestra. *Allegresse*. ArtistShare 0005. 2000. CD.

———. *Concert in the Garden*. Maria Schneider Jazz Orchestra. ArtistShare. 2004. mp3 download.

———. *Sky Blue*. Maria Schneider Jazz Orchestra. ArtistShare AS0065. 2007. CD.

Scores Referenced

Arlen, Harold and Ted Koehler. "Stormy Weather (Keeps Rainin' All The Time)," in *The Harold Arlen Songbook*, Edited by David Bickman, 48–51. Milwaukee: Hal Leonard, 1985.

Schneider, Maria. *Maria Schneider Orchestra: Evanescence*, edited by Fred Sturm. Universal Edition, 1998.

The following scores are available electronically through www.mariaschneider.com:

Aires de Lando (2006)
Allegresse (1997)
Bombshelter Beast (1995)
Bulería, Soleá y Rumba (2004)
Cerulean Skies (2007)
Choro Dançado (2001)
Coming About (1995)
Dança Ilusória (2001)
El Viento (1994)
Hang Gliding (1999)
Journey Home (1999)
Night Watchmen (1996)
Pas de Deux (2001)
Sky Blue (2004)
The "Pretty" Road (2007)
Waxwing (1993)

Vita

Education

Purchase College, State University of New York, Purchase, NY, 2009

- Master of Music in Jazz Studies
- Thesis: *Thelonious Monk's Importance to the Bebop Movement Despite Stylistic Differences*
- Jazz piano study with Hal Galper

University of Miami, Coral Gables, FL, 2007

- Bachelor of Music in Studio Music and Jazz
- Magna Cum Laude with General University Honors
- Senior Thesis: *East of Eden Suite: A Musical Composition and Theoretical Analysis*, Paul Wilson, Advisor
- Classical piano study with Ivan Davis, 2003–2005

Professional Positions Held

Oberlin College Conservatory, Oberlin, OH: Visiting Instructor, Theory and Aural Skills
2014–2016

University of Kentucky, Lexington, KY: Teaching Assistant, Theory and Aural Skills,
2012–2014

Centre College, Danville, KY: Visiting Instructor of Music, Applied Jazz Piano, 2013–
2014

University of Massachusetts, Amherst, MA: Adjunct Lecturer, Applied Jazz Piano, 2011

Nashua Community College, Nashua, NH: Adjunct Professor, Music Appreciation, 2011

Scholastic and Professional Honors

Research Materials Funding, University of Kentucky Friends of Music, 2015

Kentucky Opportunity Fellowship, stipend plus full tuition, 2011–2012

Merit Scholarship, Purchase College, 2007–2009

University of Miami Honors Program, 2003–2007

Constance Weldon Scholarship for Outstanding Musical and Academic Performance,
2003–2007

University of Miami Dean's List (six semesters)

University of Miami Provost's Honor Roll (two semesters)

Benjamin M. Geyer